Prepared for

Land and Lakes Company
123 N. Northwest Highway
P.O. Box 778
Park Ridge, Illinois 60068-0778

SUMMARY OF SITE INVESTIGATIONS AND RESPONSE TO THE EXPANDED SITE INVESTIGATION REPORT FOR LAND AND LAKES COMPANY NUMBER 3 FACILITY (122ND STREET LANDFILL) APPENDIX A VOLUME I

Prepared by

GeoSyntec Consultants
621 N.W. 53rd Street, Suite 650
Boca Raton, Florida, USA

AND

EnviroResources, Inc.
3303 Beachwater Drive
Katy, TX 77450

August 1996

INDEX TO APPENDIX A

Index to Appendix A

IEPA Permit Documents
1994-1996 Excluding Significant Modification
(8 Volumes)

1. August 6, 1996 - IEPA Supplemental Permit and Permit Application for Active Gas Collection System - IEPA Permit No. 1996-138-SP.

2. September 7, 1995 - IEPA Supplemental Permit and Permit Application for Cell VI Operating Permit - IEPA Permit No. 1995-246-SP.

3. June 19, 1995 - IEPA Supplemental Permit and Permit Application for Final Cover - IEPA Permit No. 1995-106-SP.

4. June 13, 1995 - IEPA Supplemental Permit and Permit Application for Alternate Daily Cover - IEPA Permit No. 1994-202-SPX.

5. February 10, 1995 - IEPA Supplemental Permit and Permit Application for the Development of Cell VI, Phase II - IEPA Permit No. 1994-390-SP.

6. January 9, 1995 - IEPA Water Pollution Control Permit and Permit Application for Discharge of Leachate - IEPA Permit No. 1995-EN-2365.

7. December 23, 1994 - IEPA Supplemental Permit and Permit Application for Operation in Leachate Storage Pond - IEPA Permit No. 1994-537-SP.

8. December 14, 1994 - IEPA Supplemental Permit and Permit Application for Waste Excavation Plan - IEPA Permit No. 1994-427-SP.

9. November 9, 1994 - IEPA Supplemental Permit and Permit Application for Renewal of Permit to Accept Waste Streams on Generic Basis - IEPA Permit No. 1994-374-SP.

10. September 14, 1994 - IEPA Supplemental Permit for Construction of Leachate Storage Pond - IEPA Permit No. 1994-289-SP.

11, July 12, 1994 - IEPA Supplemental Permit and Permit Application for Alternate Daily Cover - IEPA Permit No. 1994-202-SPX.

12. April 8, 1994 - IEPA Supplemental Permit and Permit Application for Cell V Operating Permit - IEPA Permit No. 1994-090-SP.

1

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

y A. Gade, Director
2200 Churchill Road, Springfield, IL 62794-9276
217/524-3300

August 6, 1996

CERTIFIED MAIL
Z 363 613 852
Z 363 613 853

OWNER
Stony Island Reclamation
123 North Northwest Highway
Park Ridge, Illinois 60068

OPERATOR
Land and Lakes Company
P.O. Box 778
Park Ridge, Illinois 60068

Re: 0316000034--Cook County
Land & Lakes #3
Permit No. 1978-002-DE\OP
Supplemental Permit No. 1996-138-SP
Log No. 1996-138
Permit File

RECEIVED
AUG 0 9 1996
Ans'd.....

Gentlemen:

Supplemental permit is hereby granted to Stony Island Reclamation as owner and Land and Lakes Company as operator to modify the development and operation of the above referenced landfill all in accordance with the plans signed and sealed by James Walsh, P.E. Final plans, specifications, application and supporting documents as submitted and approved shall constitute part of this permit and are identified on the records of the Illinois Environmental Protection Agency, Bureau of Land by the permit number(s) and log number(s) designated in the heading above.

Specifically, this permit approves the construction of a gas collection facility as specified in Permit Application, Log No. 1996-138.

The permit is issued subject to the standard conditions attached hereto and incorporated herein by reference, and further subject to the following special conditions. In case of conflict between the application and plans submitted and these special conditions, the special conditions of this permit shall govern.

1. This Permit allows the development and construction of an active gas collection facility and/or gas flares. When construction is completed, the applicant shall submit "as built" construction plans that fully describe the system operation and proposed maintenance in an application for operating authorization.

2. It should be noted that this project includes air emissions sources which may require a construction and an operating permit from the Division of Air Pollution Control. You may

apply for joint construction and operating permit simultaneously. Please complete attached forms to submit permit applications.

3. Installation of the collection system shall be completed as quickly as possible to minimize the release of odors. Furthermore, no refuse uncovered during excavation shall be left exposed overnight.

4. Borings for gas well installations shall terminate at elevations which will insure that the bore holes do not encounter the landfill invert or adversely affect the integrity of the liner.

5. Refuse removed during construction of the gas collection system shall be loaded into trucks, covered, and immediately transported to the active fill area and disposed.

6. All flares are to be equipped with gas shut-off valves. Flares which will not remain lit are to be relit or shut off immediately.

7. Shielding is to be provided on the flares to limit visibility and wind effects.

8. The current closure and post closure care cost estimate for this facility is $2,770,932. In the application for operating authorization for Phase I of the gas extraction system, the cost estimate shall increase by $323,114 to $3,094,046. The operator shall provide financial assurance for this amount in the application for operating authorization for the gas collection system. The increased cost estimate only includes the cost estimate for Phase I of the gas collection system. If Phase II is put into service, the cost estimate and financial assurance requirement shall be increased by the amount shown in Permit Application, Log No. 1996-138 for Phase II of the gas extraction system.

9. The gas flares shall be inspected once per week to ensure proper operation of the flare and flow control systems (valves, etc.).

10. The gas wells, probes, condensate drains and condensate knockouts shall be inspected at least monthly for structural integrity and proper operation.

11. While the site is being developed or operated as a gas control or collection facility, corrective action shall be taken if erosion or ponding are observed, if cracks greater than one inch wide have formed, if gas, odor, vegetative or vector problems arise, or if leachate popouts or seeps are present in the areas disturbed by constructing this gas collection facility.

12. Any penetration or disturbance of the final cover material at this facility caused by construction of the gas control system shall be sealed or repaired to ensure that a minimum of two (2) feet of compacted clay final cover exists above all buried appurtenances of the gas collection system.

13. Condensate from the gas accumulation system, and leachate pumped and removed from the landfill shall be disposed at an IEPA permitted publicly-owned treatment works, or a commercial treatment or disposal facility. The leachate/condensate liquid shall be analyzed individually to determine if hazardous waste characteristics are present. A written log showing the volume of liquid discharged to the treatment facility each day by the landfill will be maintained at the landfill. This log will also show the liquid analyses.

14. When this facility is no longer used for gas control or collection, the pipes, collection devices or other appurtenances will be cut off at least 2.5 feet below ground level, the pipes plugged, and two feet of clay cover material compacted in eight inch layers placed in the cut area. This cover shall be topped with six inches of soil and seeded with grass that provides a vegetative cover. In addition, if any underground storage tank is determined to be regulated by Subtitle I of RCRA, that tank must be closed in accordance with the applicable Subtitle I closure requirements.

15. This permit is issued with the expressed understanding that no process discharge to Waters of the State or to a sanitary sewer will occur from these facilities except as authorized by a permit issued by the Bureau of Water Pollution Control.

16. This permit has been approved pursuant to the requirements for a landfill which is currently cubject to 35 IAC 807. The application has not been reviewed with respect to the standards of 35 IAC 811 and this supplemental permit does not constitute a partial approval of the significant modification required by 35 IAC 814.104.

Except as modified in the above documents, the site shall be developed and operated in accordance with the terms and conditions of Permit No. 1978-002-DE and 1978-002-OP, dated January 10, 1978 and September 2, 1978 respectively, and with other permits issued for this site.

The original and two (2) copies of all certifications, logs or reports and three (3) copies of groundwater monitoring chemical analysis forms which are required to be submitted to the Agency by the permittee should be mailed to the following address:

Illinois Environmental Protection Agency
Planning and Reporting Section
Bureau of Land -- #24-S
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

Within 35 days of the date of mailing of the Agency's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Agency, however, the 35-day period for petitioning for a hearing may be extended for a period of time not

to exceed 90 days by written notice provided to the Board from the applicant and the Agency within the 35-day initial appeal period.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:SCC\mls\961482.WPD

Attachment: Standard Conditions

Enclosures: Air Permit Application Forms

cc: Jim Walsh, P.E., SCS Engineers
Bill Abolt, City of Chicago, Department of the Environment

Land and Lakes Company

123 N. Northwest Highway
P.O. Box 778
Park Ridge, Illinois 60068-0778

(708) 825-5000
Fax (708) 825-0887

April 22, 1996

Federal Express
#7968293200

Mr. Edwin C. Bakowski, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land
2200 Churchill Street
Springfield, Illinois 62794-9276

Re: Land and Lakes #3
#0316000034 - Cook County

Dear Mr. Bakowski:

Land and Lakes Company (LALC) is pleased to submit three copies of the enclosed supplemental permit application to the Illinois Environmental Protection Agency (IEPA). This supplemental permit application includes a design memorandum and engineering plans for an active gas management system.

LALC respectfully requests an expedited review of this supplemental permit application so that this system can be installed during the 1996 construction season. In order to complete the project this construction season, construction needs to begin as soon as possible. LALC would greatly appreciate if the Agency would issue this permit in May, 1996.

This is an important project for LALC. I would greatly appreciate if you have any questions during your review, that you contact me so that I can expedite any information you may require. Thank you for your cooperation.

Very truly yours,

Jay S. Goldstein
Environmental Director

JSG:bmj

Enclosure

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

General Application for Permit (LPC-PA1)

This form must be used for any application for permit from the Bureau of Land, except for waste stream applications and applications for the composting of landscape waste only. One original and two (2) photocopies, or three (3) if applicable, of all permit application forms must be submitted. Attach the original and appropriate number of copies of any necessary plans, specifications, reports, etc. to fully support and describe the activities or modifications being proposed. If necessary, attach sufficient information to demonstrate compliance with all applicable RCRA requirements. Incomplete applications will be rejected. Please refer to the instructions for further guidance.

Note: Permit applications which are to be hand-delivered to the Bureau of Land, Permit Section must be delivered to the 1240 North Ninth Street location between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print legibly.

I. SITE IDENTIFICATION

Name: Land and Lakes #3 Site # (IEPA): 0 3 1 6 0 0 0 0 3 4

Physical Site Location (street, road, etc.): 2000 East 122nd Street

City, Zip Code: Chicago, Illinois 60633 County: Cook

Existing DE/OP Permit Nos. (if applicable): 1978-2-OP

II. OWNER/OPERATOR IDENTIFICATION

	OWNER	OPERATOR
Name:	Stony Island Reclamation	Land and Lakes Company
Address:	123 N. Northwest Highway	Post Office Box 778
	Park Ridge, IL 60068	Park Ridge, IL 60068
Contact Name:	James J. Cowhey	James J. Cowhey
Phone #:	(847) 825-5000	(847) 825-5000

III. PERMIT APPLICATION IDENTIFICATION

TYPE SUBMISSION/REVIEW PERIOD:

- ___ New Landfill/180 days (35 IAC Part 813)
- ___ Landfill Expansion/180 days (35 IAC Part 813)
- ___ 1st Sign. Mod/90 days (35 IAC Part 814)
- ___ Sign. Mod to Operate/90 days (35 IAC Part 813)
- ___ Other Sign. Mod/90 days (35 IAC Part 813)
- ___ Renewal of Landfill/90 days (35 IAC Part 813)
- ___ Developmental/90 days (35 IAC Part 807)
- ___ Operating/45 days (35 IAC Part 807)
- X Supplemental/90 days (35 IAC Part 807)
- ___ Permit Transfer/90 days (35 IAC Part 807)
- ___ Generic/90 days

TYPE FACILITY:

- X Landfill
- ___ Land Treatment
- ___ Transfer Station
- ___ Treatment
- ___ Storage
- ___ Incinerator
- ___ Composting
- ___ Recycling/Reclamation
- ___ Other (Specify)

TYPE WASTE:

- X General Municipal Refuse
- ___ Hazardous
- X Special (Non-hazardous)
- ___ Chemical Only (exc. putrescible)
- ___ Inert Only (exc. chemical and putrescible)
- ___ Used Oil
- ___ Solvents
- ___ Landscape/Yard Waste
- ___ Other (Specify)

DESCRIPTION OF THIS PERMIT REQUEST: (Include a brief narrative description here.)

Active Gas Collection System

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

IV. COMPLETENESS REQUIREMENTS

The following items must be checked Yes, No or N/A. Each item will be reviewed by the log clerk. Blank items will result in rejection of the application. Please refer to the instructions for further guidance.

1. Have all public notice letters (LPC-PA16) been mailed and are copies and supporting documentation enclosed? — X Yes ___ No ___ N/A

2. a. Is the Siting Certification Form (LPC-PA8) completed and enclosed? — ___ Yes ___ No X N/A

   b. Is siting approval currently under litigation? — ___ Yes ___ No X N/A

3. a. Is a closure, and if necessary a post closure, plan covering these activities being submitted, or — ___ Yes X No ___ N/A

   b. has one already been approved? (Provide permit number 1995-246-SP.) — X Yes ___ No ___ N/A

4. a. For waste disposal sites only: Has any employee, owner, operator, officer or director of the owner or operator had a prior conduct certification denied, cancelled or revoked? — ___ Yes X No ___ N/A

   b. Have you included a demonstration of how you comply or intend to comply with 35 Ill. Adm. Code Part 745? OC#96006 dated 4/19/96 — X Yes ___ No ___ N/A

5. a. Is land ownership held in beneficial trust? — ___ Yes X No ___ N/A

   b. If yes, is a beneficial trust certification form (LPC-PA9) completed and enclosed? — ___ Yes ___ No X N/A

6. a. Does the application contain information or proposals regarding the hydrogeology; groundwater monitoring, modeling or classification; a groundwater impact assessment; or vadose zone monitoring for which you are requesting approval? — ___ Yes ___ No X N/A

   b. If yes, have you submitted a third (3rd) copy of the application (4 total) and supporting documents?

V. SIGNATURES (Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable.)

All applications shall be signed by the person designated below or by a duly authorized representative of that person.

Corporation - By a principal executive officer of at least the level of vice-president.
Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above; and
2. is submitted with this application (a copy of a previously submitted authorization can be used).

I hereby affirm that all information contained in this Application is true and accurate to the best of my knowledge and belief.

Owner Signature: James J. Cowhey, Jr. — Title: Vice President — Date: 4/18/96

Owner FEIN or S.S. Number: 36-3080510

Operator Signature: James J. Cowhey, Jr. — Title: Vice President — Date: 4/18/96

Operator FEIN or S.S. Number: 36-2650080

Engineer Signature: — Name: James J. Walsh — Date: 04-18-96

Engineer Address: SCS Engineers
2060 Reading Road
Cincinnati, Ohio 45202

Engineer Seal: JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Engineer Phone No.: (513) 421-5353

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Agency rules and guidelines.

LWE/mls/sp00022/1-2

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

NOTICE OF APPLICATION FOR PERMIT TO MANAGE WASTE (LPC-PA16)

Date: April 22, 1996

To Elected Officials and Concerned Citizens:

The purpose of this notice is to inform you that a permit application has been submitted to the IEPA, Bureau of Land, for a solid waste project described below. You are not obligated to respond to this notice, however, if you have any comments, please submit them in writing to the address below, or call the Permit Section at 217/524-3300, within twenty-one (21) days.

Illinois Environmental Protection AGency
Bureau of Land, Permit Section (#33)
2200 Churchill Road, Post Office Box 19276
Springfield, Illinois 62794-9276

The permit application, which is identified below, is for a project described at the bottom of this page.

SITE IDENTIFICATION

Site Name: Land and Lakes #3 Site # (IEPA): 0316000034

Address: 2000 E. 122nd Street

City: Chicago, IL 60633 County: Cook

TYPE PERMIT SUBMISSION:		TYPE FACILITY:		TYPE WASTE:	
New Landfill	___	Landfill	X	General Municipal Refuse	X
Landfill Expansion	___	Land Treatment	___	Hazardous	___
First Significant Modification	___	Transfer Station	___	Special (Non-Hazardous)	X
Significant Modification to Operate	___	Treatment Facility	___	Chemical Only (exc. putrescible)	___
Other Significant Modification	___	Storage	___	Inert Only (exc. chem. & putrescible)	___
Renewal of Landfill	___	Incinerator	___	Used Oil	___
Development	___	Composting	___	Solvents	___
Operating	___	Recycling/Reclamation	___	Landscape/Yard Waste	___
Supplemental	X	Other	___	Other (Specify ___)	___
Transfer	___				
Name Change	___				
Waste Stream	___				
Generic	___				

DESCRIPTION OF PROJECT: (For multiple waste stream applications, see reverse side).

Active Gas Collection System

IL 532 0334
LPC 040 Rev. Aug-93

Printed on Recycled Paper

Date: _____

	Generator Name	Waste Stream Identification Generic Name	Waste Class Hazardous/ Non-Hazardous
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

Please retain a copy for your own use.

LWE:CR:lat/sp/678Y,1-2

AFFIDAVIT

I, Stella Schaller, certify that on April 22, 1996, I mailed the attached letters to those persons identified on the attached list. First class postage was affixed to each letter.

Stella Schaller

4-22-96
Date

"OFFICIAL SEAL"
Barbara Jarecki
Notary Public, State of Illinois
My Commission Expires 11/14/98

Barbara Jarecki
Notary Public

Seal

122nd Street Notification List

Mr. John M. "Jack" O'Malley
Cook County State's Attorney
118 N. Clark St., Room 434
Chicago, IL 60602

Mr. Glen E. Carr, Chief
Public Interest Bureau
500 Daley Center
Chicago, IL 60602

Mr. John H. Stroger, Jr.
County Board President
118 N. Clark St., Room 434
Chicago, IL 60602

Honorable Jack O'Connor
12307 S. Harlem, Suite 7
Palos Heights, IL 60463

City Clerk
City of Chicago
121 N LaSalle St
Chicago, IL 60602

Village Clerk
Village of Riverdale
325 W. 142nd St
Riverdale IL 60627-2332

City Clerk
City of Harvey
15320 Broadway
Harvey, IL 60426

Honorable Patrick O'Malley
5100 West 127th Street
Alsip, Illinois 60658

Village Clerk
Village of Dolton
14014 Park Ave.
Dolton, IL 60419

Village Clerk
Village of South Holland
16226 Wausau Avenue
South Holland, IL 60473

Village Clerk
Village of Burnham
13925 Entre Ave.
Burnham IL 60633

City Clerk
City of Calumet City
204 Pulaski Road
Calumet City IL 60409

Village Clerk
Village of Phoenix
15240 Vincennes Road
Phoenix IL 60425

Dr. Cecil Lue-Hing, D.Sc., P.E.
Director, Research & Devel.
Metro. Water Reclamation Dist.
of Greater Chicago
100 E Erie St.
Chicago, IL 60611

DESIGN CRITERIA MEMORANDUM

PRELIMINARY DESIGN
LANDFILL GAS RECOVERY SYSTEM
122ND STREET LANDFILL
CHICAGO, ILLINOIS

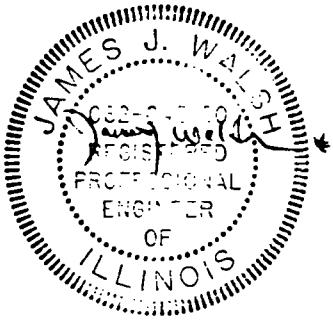
Prepared for:

Zahren Alternative Power Corporation
124 Sills Road
P.O. Box 7
Yaphank, New York 11980
(516) 924-5627

Land and Lakes Company
123 N. Northwest Highway
P.O. Box 778
Park Ridge, Illinois 60068
(708) 825-5000

Prepared by:

SCS Engineers
2060 Reading Road
Cincinnati, Ohio 45202
(513) 421-5353



4/16/96

File No. 0595037
April 18, 1996

CONTENTS

DESIGN CRITERIA MEMORANDUM

PRELIMINARY DESIGN
LANDFILL GAS RECOVERY SYSTEM
122ND STREET LANDFILL
CHICAGO, ILLINOIS

INTRODUCTION

This Landfill Gas (LFG) Collection System Design Criteria Memorandum for the Land and Lakes 122nd Street Landfill in Chicago, Illinois, has been prepared for Zahren Alternative Power Corporation as specified in the proposal scope of services dated January 15, 1996. This memorandum along with the LFG collection system design drawings, constitutes the design documents for the wellfield and piping network for the LFG collection system.

BACKGROUND

The 122nd Street landfill site presently has a passive gas system with passive gas flares. These flares are located mainly on the western slope of the landfill, approximately half way down the slope. There are three gas flares along the southern slope of the landfill. The information on the construction of the gas flares was reported from Land and Lakes Company. The gas flares were constructed to a depth of approximately 30 to 40 ft, in an 18-inch borehole. In the borehole, a 6-inch diameter PVC pipe was installed from the bottom of the borehole to approximately 8 to 10 ft above ground. The pipe was perforated (or slotted) to within 4 or 5 ft of the surface. On top of the pipe (above ground), there is a wind shield and a shut-off valve. The existing passive flares will be properly abandoned upon the construction and operation of the LFG system.

PROPOSED LFG SYSTEM DESCRIPTION AND OBJECTIVES

The purpose of the proposed LFG collection system is to extract LFG from the landfill and to control off-site migration of the landfill gas in accordance with 35 Illinois Administrative Code (IAC) Section 811.311 (d)(3). The LFG may be used to fuel internal combustion engine generators, which could generate electricity for sale to a utility, or be used directly by a medium Btu user, such as a boiler or kiln. The proposed LFG collection system is comprised of vertical extraction wells, collection piping to transport the LFG from the wellfield to a condensate handling system, the blower/flare unit, and eventually to the end-user.

Based on information obtained during field observations and review of existing data, SCS developed design criteria for the LFG collection system. The design criteria was developed for the following:

- Vertical extraction well depth and spacing.
- LFG system sizing.

The well system was designed with all the wells being placed within the landfill limits of solid waste, in accordance with 35 IAC 811.311 (d)(1). The vertical well spacing was design based on the projected radius of influence that each well will exert on the landfill. The spacing and layout of the well system was designed to maximize collection of the landfill gas, and to minimize the potential for off-site migration of landfill gas, in accordance with 35 IAC 811.311 (d)(2).

The radius of influence was calculated in two different ways, depending on the part of the landfill in which the wells were being placed. For the existing cells (Cells 1 through 5), the radius of influence was calculated using a well depth equal to the difference between the existing surface elevation and the average elevation of the leachate. A pipe will be placed in that borehole, equal to 1 ft less than the depth calculated above. The pipe will have the bottom two-thirds slotted, and the top one-third solid. The borehole will be backfilled with gravel around the slotted portion of the pipe, a soil/bentonite plug above the gravel, more soil backfilled around the solid pipe, and another soil/bentonite plug.

For wells being designed for future Cell 6, the radius of influence was calculated using a well depth equal to three quarters of the difference between the final grade elevation and the bottom of waste elevation. The remaining design criteria is the same for these wells as for the wells designed for the existing cells. The pipe material will be Schedule 80 PVC pipe to meet the requirements of 35 IAC 811.311 (d)(5).

The final cover system for various parts of the landfill is: The western slope has 2 ft of clay and 6 inches of topsoil placed prior to September 18, 1990, per 35 IAC 807 regulations. The south and east slopes, along with most of the top area will receive a cap consisting of 3 ft of clay, 2.5 ft of protective soil, and 6 inches of topsoil. The cap over Cell 6 will receive 1 ft of clay cover, 1 40-mil flexible membrane liner, 2.5 ft of protective soil, and 6 inches of topsoil. For those areas where wells will be drilled into the existing cap (west slope, south slope, and some of the east slope), the cap will be replaced with the identical configuration as described above. For those areas where there is not a cap system presently in place, the well heads will be protected from damage, and the capping system will be placed around the wells, when the cap is installed for that area. In accordance with 35 IAC 811.311(d)(9), under no circumstances will the gas collection system compromise the integrity of the liner, leachate collection, or cover system.

The vertical extraction wells are connected together by HDPE header system and condensate management system. The header system is designed to transport the landfill gas to a blower/flare facility for processing. From this facility, the gas can either be destroyed by a candle flare, or transported to an end-user for consumption. The header system was laid out to run with the natural slope of the final grading plan at a minimum slope of 3 percent. The same minimum slope requirement was used for laying out the well laterals that connect the wells to the header system. At low points along the header system, and at the blower/flare station, condensate knockout devices are to

be installed for the removal of condensate from the system. For low points located within the limits of solid waste, the condensate will be returned to the landfill. For the condensate knockout at the blower/flare station, the condensate will be returned to the landfill or managed separately in accordance with the requirements of 35 IAC 811.311(d)(8).

For sizing of the header system, flow rates were calculated for each well. The flow rate was calculated using the volume of the zone of influence from each well. The flow rate was then subjected to a factor of safety of 50 percent. The flow rate was then input at the appropriate points along the header system. The header sizing was then determined based on limiting the velocity in the header system. The limiting velocities are 2,400 ft per minute (fpm) when the gas flow and the condensate flow are in the same direction, and 1,200 fpm when the gas flow and the condensate flow are in the opposite direction. In accordance with 35 IAC 811.312(d), representative flow rate measurements shall be made of gas flow into treatment or combustion devices. The portion of the gas collection system used to convey the gas collected from one or more units for processing and disposal shall be tested to be airtight to prevent the leaking of gas from the collection system or entry of air into the system in accordance with 35 IAC 811.311(d)(10).

In accordance with 35 IAC 811.311(d)(4), the gas collection system is designed to function for the entire design period. However, as stated in 35 IAC 811.311(d)(4), in the design period there may be changing gas flow rates and compositions. Additional vertical extraction wells may be added to the existing system to accommodate these changes. In anticipation of this, the header system and blower/flare system has been designed to accommodate flow from at least three times the number of wells currently designed for the facility. Therefore, at any time during the design period, vertical extraction wells may be added to the system up to the design capacity. In accordance with 35 IAC 811.311(d)(11), the gas collection system shall be operated until the waste has stabilized enough to no longer produce methane in quantities that exceed the minimum allowable concentrations stated in 35 IAC 811.311(a)(1), (a)(2), and (a)(3).

The gas collection system has been designed and constructed to withstand all landfill operating conditions, including settlement, in accordance with 35 IAC 811.311(d)(6). In accordance with 35 IAC 811.311(d)(5), all materials and equipment used in construction of the system shall be rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas.

The blower/flare facility was designed to handle the total amount of landfill gas generated from the entire facility. When used for the on-site combustion of landfill gas, the flare shall meet the general control device requirements of new source performance standards adopted pursuant to Section 9.1(b) of the Act. As required by 35 IAC 811.312(c), no gas will be discharged directly to the atmosphere unless treated or burned on site prior to discharge in accordance with a permit issued by the Agency pursuant to 35 IAC 200 through 245.

If the gas is combusted on site in a device other than flares, it will be done in accordance with the requirements of 35 IAC 811.312(f). If the landfill gas is transported off site to a gas processing facility, it will be done in accordance with the requirements of 35 IAC 811.312(g).

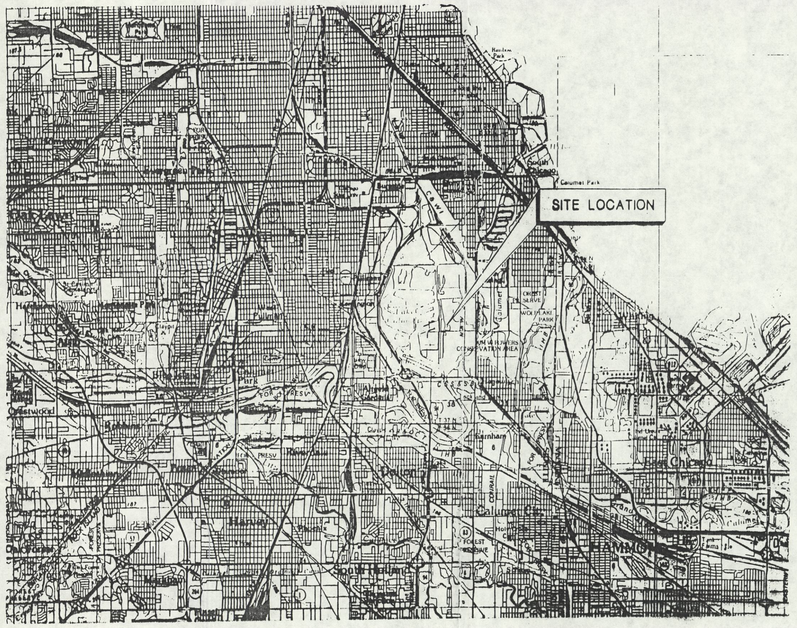
JAMES J. WALSH
062-043100
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

PRELIMINARY DESIGN

LANDFILL GAS RECOVERY SYSTEM

122nd STREET LANDFILL

CHICAGO, ILLINOIS



LOCATION MAP

N

GAS SYSTEM DEVELOPER:

ZAHREN ALTERNATIVE POWER CORPORATION
P.O. BOX 7
124 SILLS ROAD
YAPHANK, NEW YORK 11980
PHONE (516) 924-5300
FAX (516) 924-5627

LANDFILL OWNER/OPERATOR

LAND AND LAKES COMPANY
123 N. NORTHWEST HIGHWAY
P.O. BOX 778
PARK RIDGE, ILLINOIS 60068-0778
PHONE (708) 825-5000
FAX (708) 825-0887

GAS SYSTEM ENGINEERS:

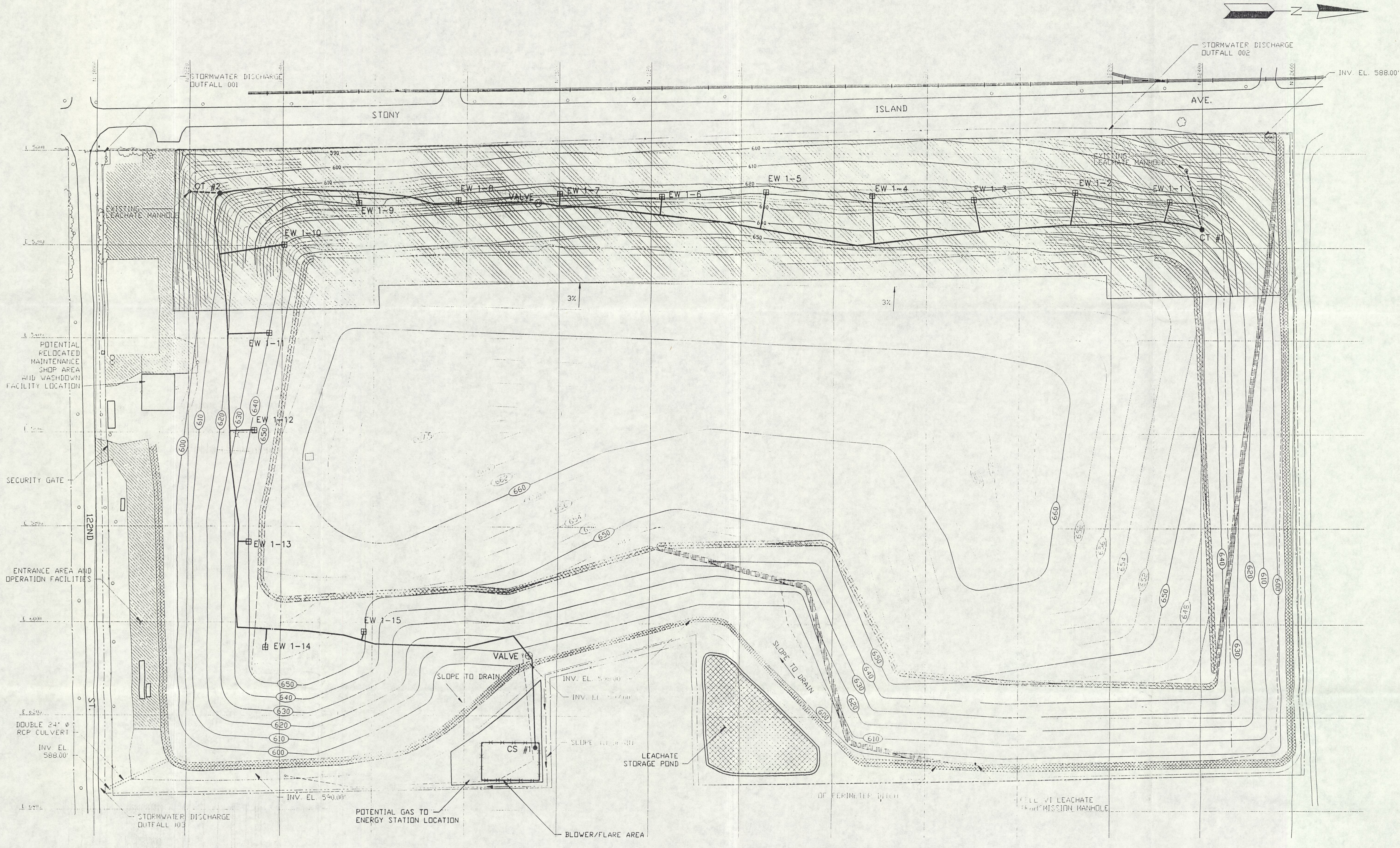
SCS ENGINEERS
2060 READING ROAD
SUITE #200
CINCINNATI, OHIO 45202-1497
PHONE (513) 421-5353
FAX (513) 421-2847

DRAWING INDEX

APRIL 18, 1996
REVISED JULY 11, 1996

PRINTED 07-30-96

CADD/0595037/122ND/PHASE-1/COVER



LEGEND:

- ● CT #1 PROPOSED CONDENSATE TRAP
- ● CS #1 PROPOSED CONDENSATE SUMP
- ⊞ EW 1–x PROPOSED EXTRACTION WELL
- ——— PROPOSED HEADER
- ⊕ PROPOSED VALVE
- ------- PROPOSED CONDENSATE DRAIN LINE

NOTES:

1. EXACT SYSTEM LAYOUT WILL CHANGE DURING CONSTRUCTION TO ACCOMODATE FIELD CONDITIONS.
2. VERTICAL EXTRACTION WELLS MAY BE ADDED DURING THE DESIGN PERIOD.
3. HEADER AND LATERAL PIPING MAY BE INSTALLED EITHER ABOVE GROUND OR BELOW GROUND AT THE DISCRETION OF THE DESIGN ENGINEER.

SCALE 100 0 50 100 200 FEET

PRINTED 07-30-96

JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE: WELL AND HEADER LAYOUT PHASE I

PROJECT TITLE: PRELIMINARY DESIGN LANDFILL GAS RECOVERY SYSTEM 122nd STREET LANDFILL CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER: [illegible] ALTERNATIVE POWER CORPORATION P.O. BOX 7,124 SILLS ROAD YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR: LAND AND LAKES COMPANY 123 N. NORTHWEST HIGHWAY P.O. BOX 778 PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-6353 FAX NO. (513) 421-2847

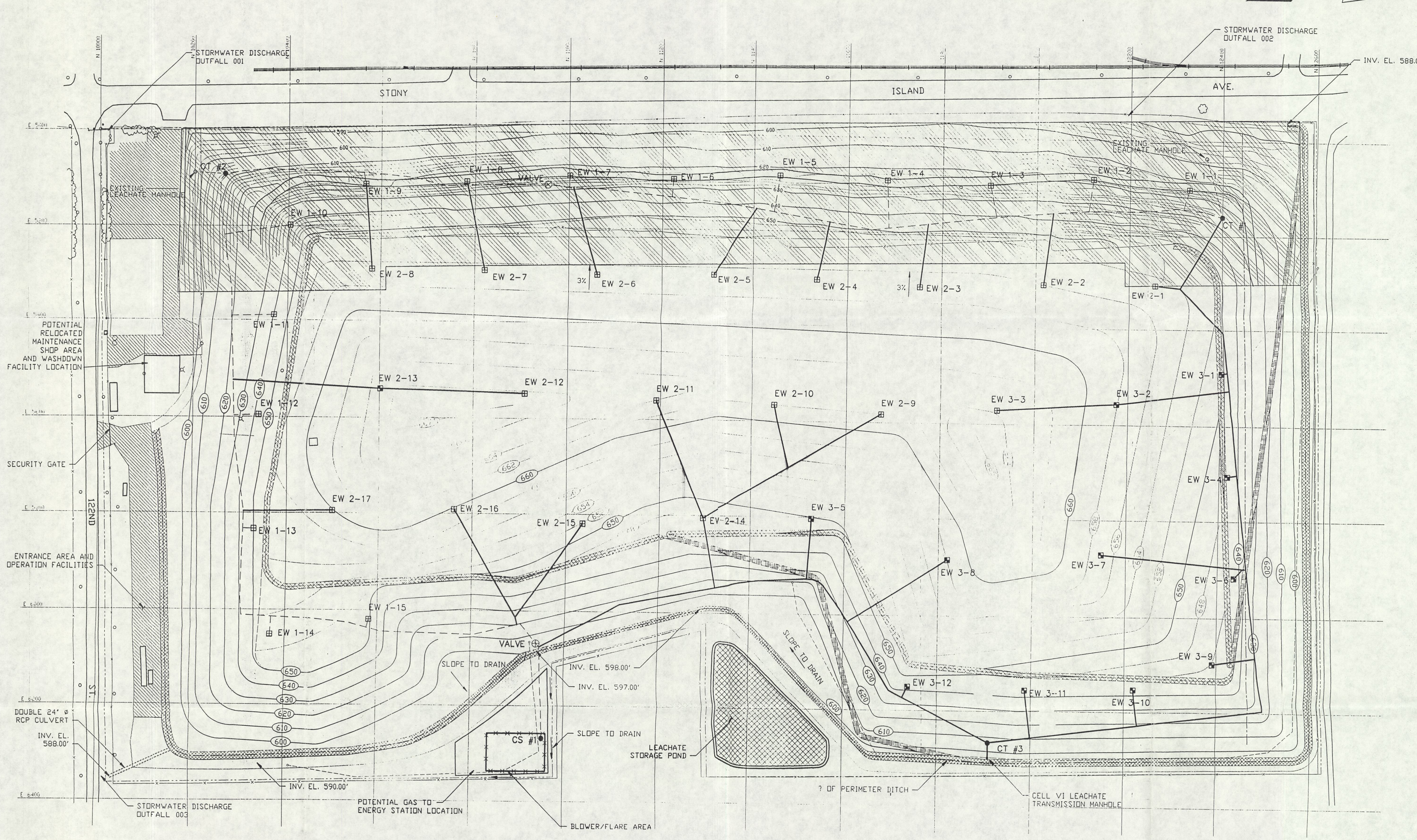
PROJ. NO. 0595037.00 | DWN. BY: FDB | Q/A RVW BY: JJV
DSN. BY: FDB | CHK. BY: CES

CADD FILE: FIN-PH1

DATE: APRIL 18, 1996

SCALE: AS SHOWN

DRAWING NO. 2 of 8



LEGEND:

● CT #1	PROPOSED CONDENSATE TRAP
● CS #1	PROPOSED CONDENSATE SUMP
⊞ EW 1-x	PROPOSED EXTRACTION WELL
———	PROPOSED HEADER
⊕	PROPOSED VALVE

NOTES:

1. EXACT SYSTEM LAYOUT WILL CHANGE DURING CONSTRUCTION TO ACCOMODATE FIELD CONDITIONS.
2. VERTICAL EXTRACTION WELLS MAY BE ADDED DURING THE DESIGN PERIOD.
3. HEADER AND LATERAL PIPING MAY BE INSTALLED EITHER ABOVE GROUND OR BELOW GROUND AT THE DISCRETION OF THE DESIGN ENGINEER.

PRINTED 07-30-96

SCALE 100 0 50 100 200 FEET

JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE
WELL AND HEADER LAYOUT PHASE 2

PROJECT TITLE
PRELIMINARY DESIGN
LANDFILL GAS RECOVERY SYSTEM
122nd STREET LANDFILL
CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER:
ZAHREN ALTERNATIVE POWER CORPORATION
P.O. BOX 7,124 SILLS ROAD
YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR:
LAND AND LAKES COMPANY
123 N. NORTHWEST HIGHWAY
P.O. BOX 778
PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
2090 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2847

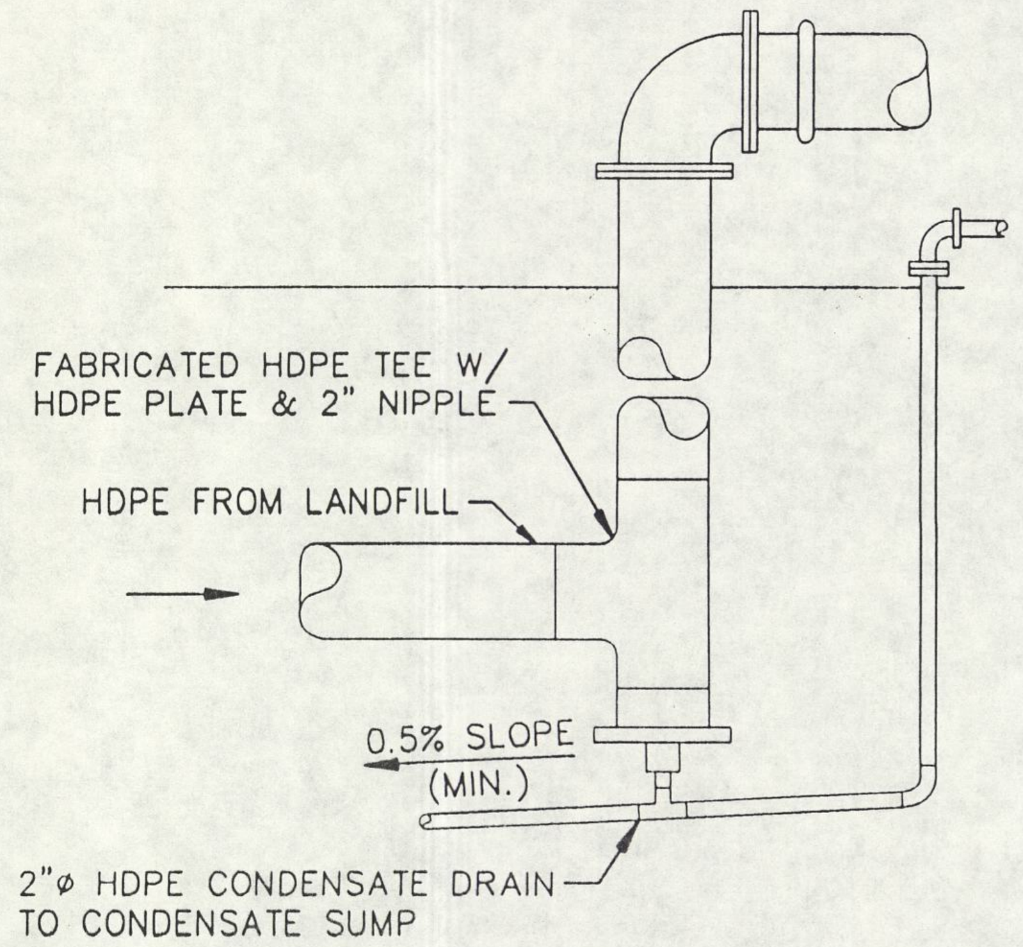
PROJ. NO. 0595037.00 | DWN. BY: FDB | Q/A RVW BY: JJW
DSN. BY: FDB | CHK. BY: CES

CADD FILE: FIN-PH22

DATE: APRIL 18, 1996

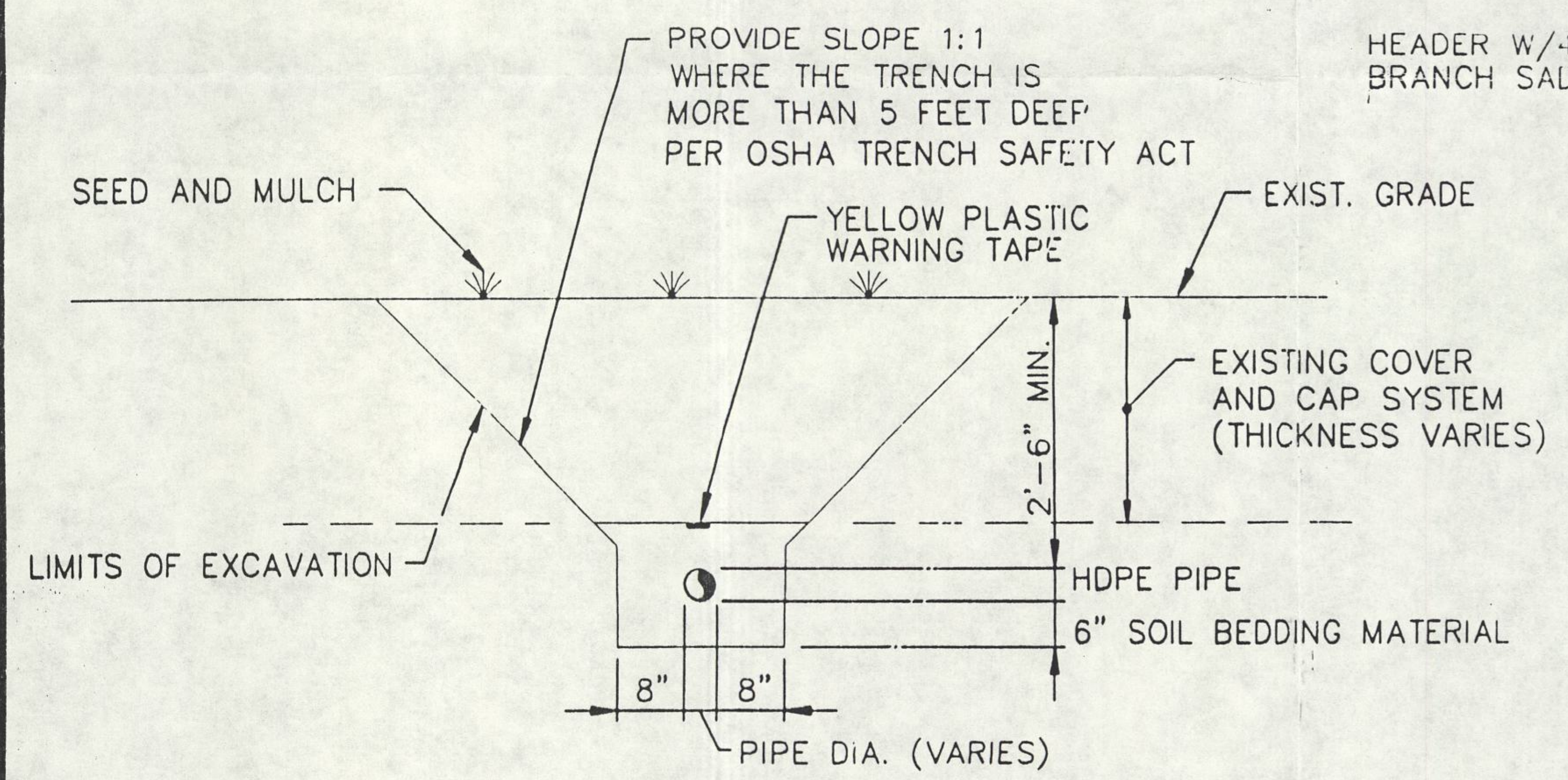
SCALE: AS SHOWN

DRAWING NO. 3 of 8



LFG HDPE HEADER PIPE STUB-UP AT BLOWER STATION (6 / 2 | 4)

(NOT TO SCALE)

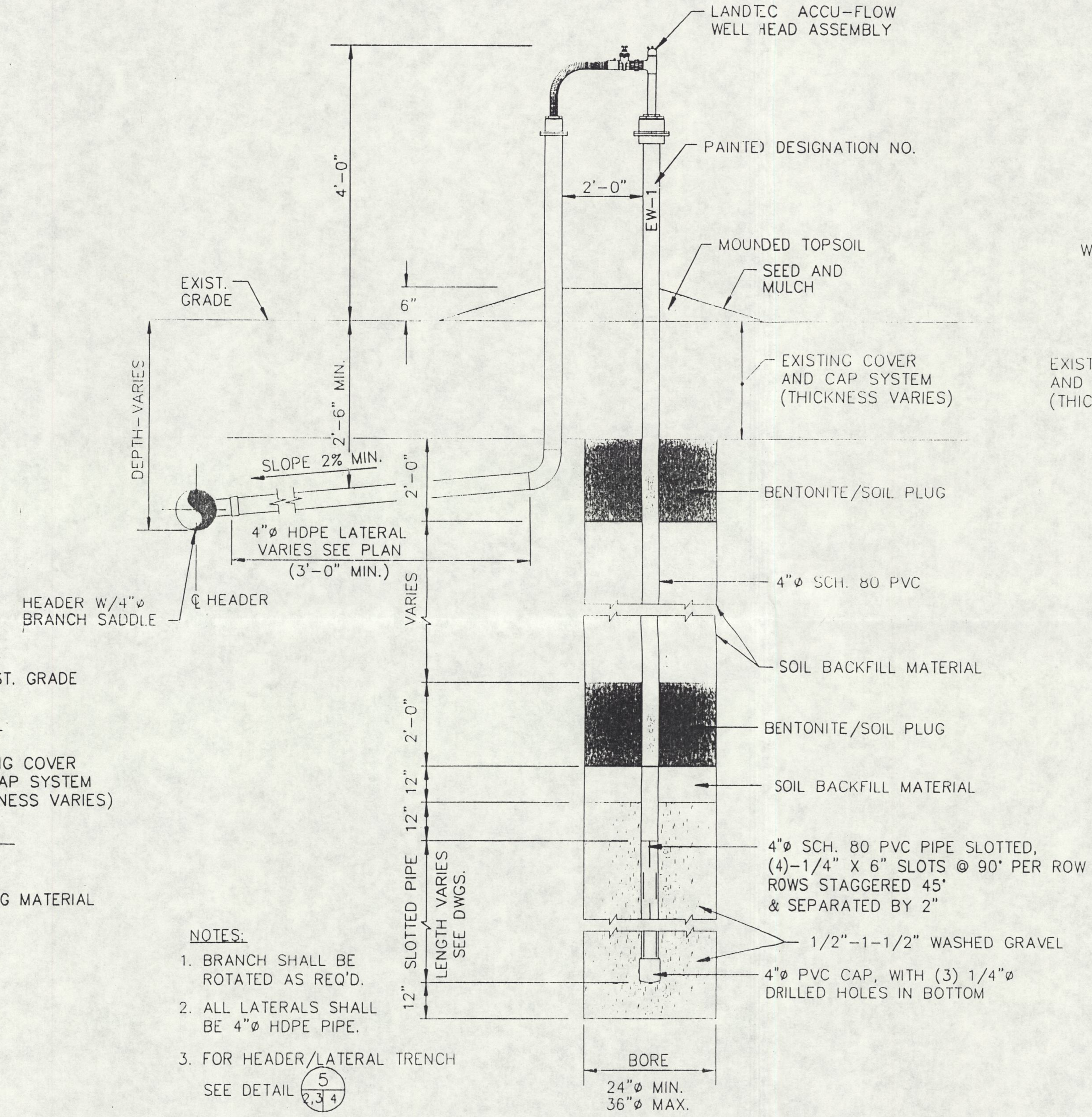


HEADER/LATERAL TRENCH DETAIL (5 / 2 | 4)

(NOT TO SCALE)

NOTES:

1. PIPE SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 3%.
2. FOR UNDERGROUND PIPE, PIPE SHALL BE PLACED A MINIMUM OF 2.5 FT. BELOW GROUND SURFACE.

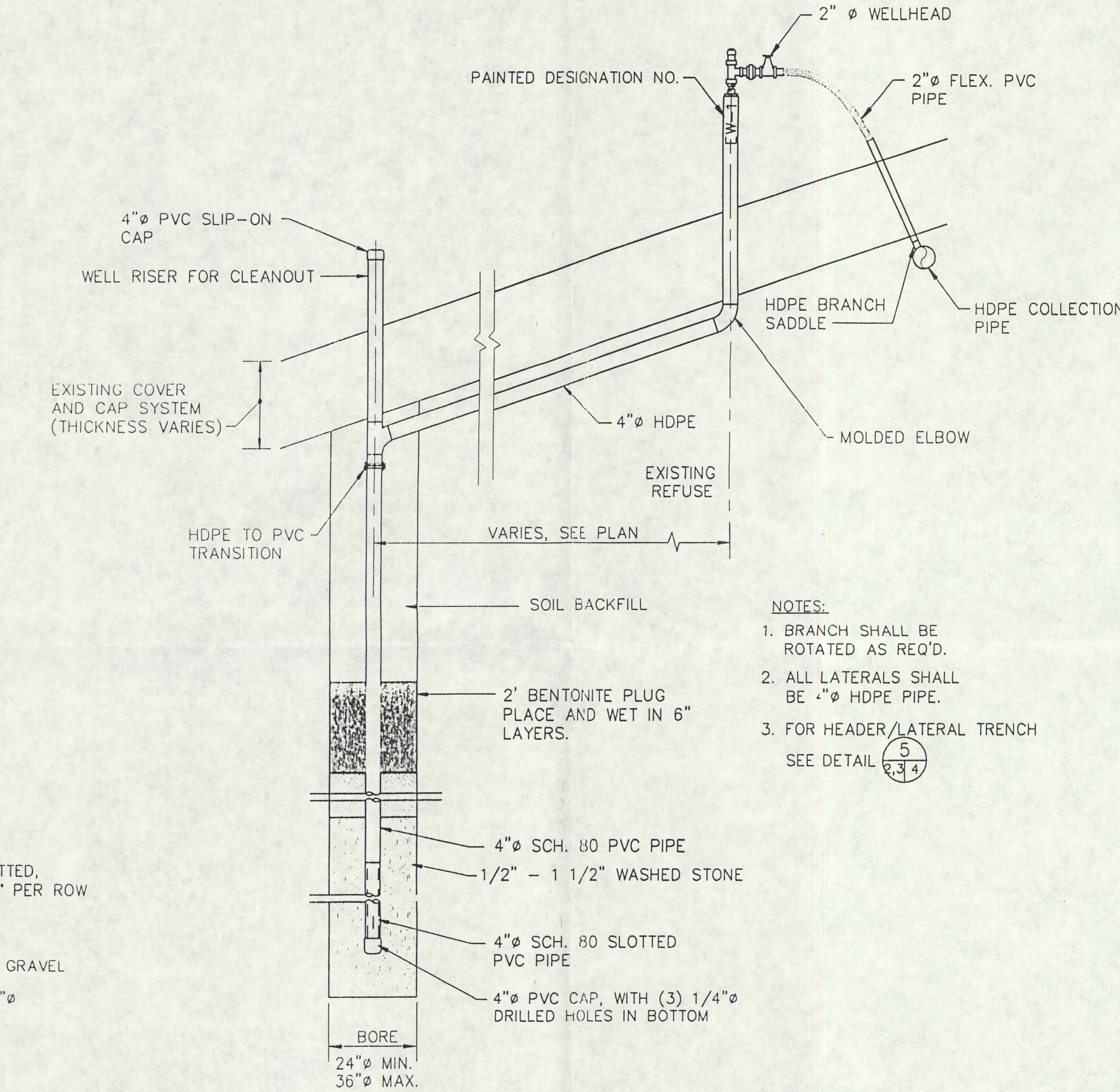


NOTES:

1. BRANCH SHALL BE ROTATED AS REQ'D.
2. ALL LATERALS SHALL BE 4"ø HDPE PIPE.
3. FOR HEADER/LATERAL TRENCH SEE DETAIL (5 / 2,3 | 4)

TYPICAL EXTRACTION WELL DETAIL (2 / 2 | 4)

(NOT TO SCALE)



NOTES:

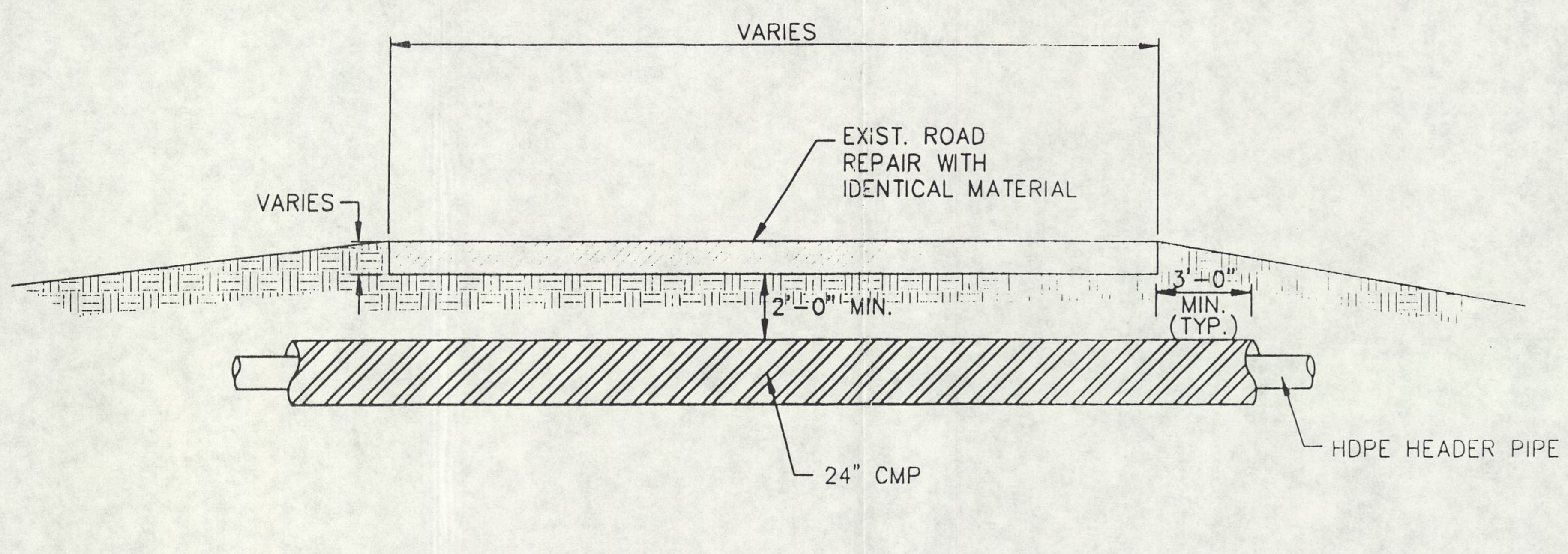
1. BRANCH SHALL BE ROTATED AS REQ'D.
2. ALL LATERALS SHALL BE 4"ø HDPE PIPE.
3. FOR HEADER/LATERAL TRENCH SEE DETAIL (5 / 2,3 | 4)

NOTES:

1. WELL BORING DEPTHS AND SLOTTED LENGTHS WILL BE AS NOTED IN THE DESIGN MEMORANDUM.

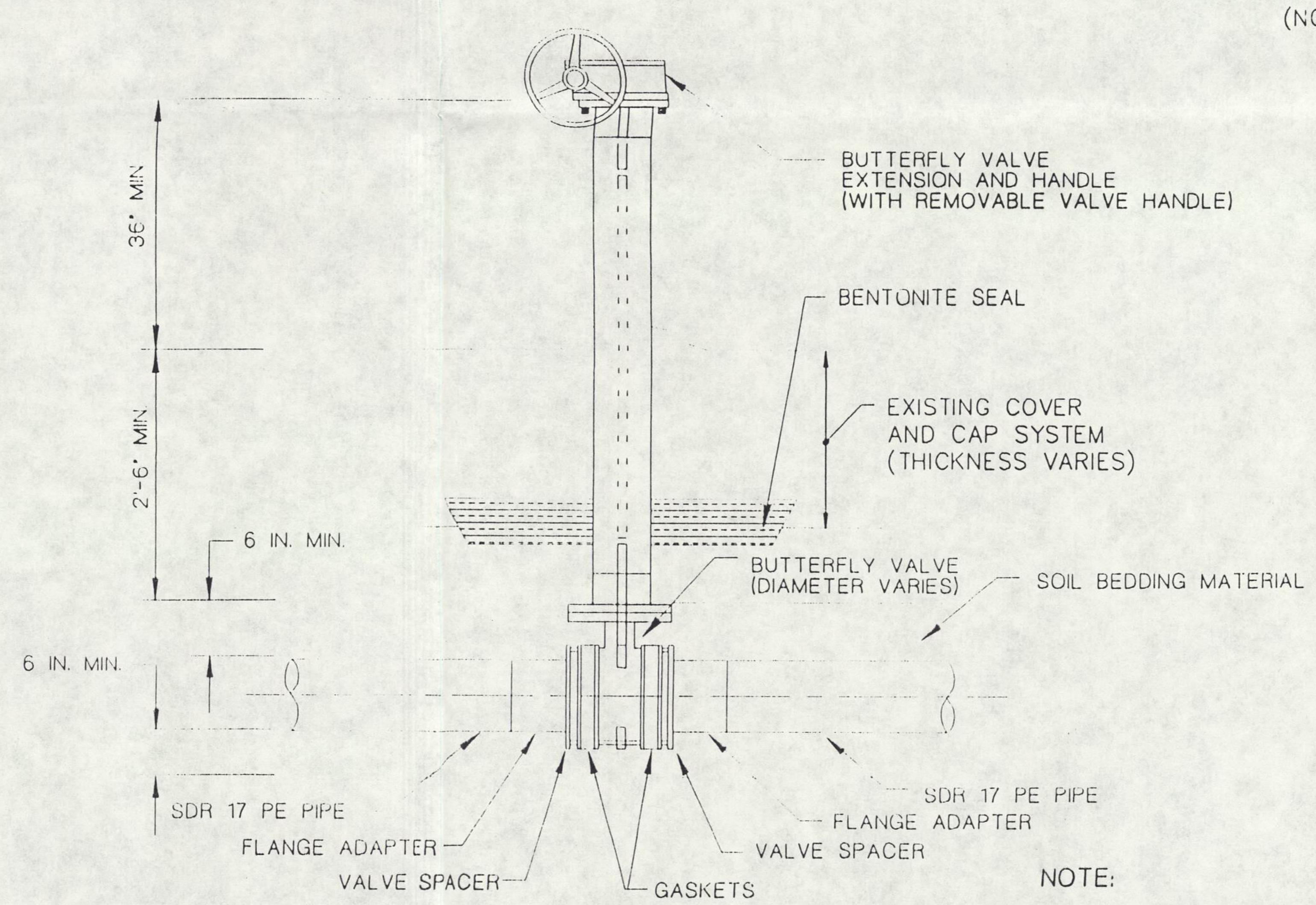
BURIED EXTRACTION WELL DETAIL (1 / 2 | 4)

(NOT TO SCALE)



LFG HEADER PIPE CROSSING UNDER EXISTING ROAD DETAIL (4 / 2 | 4)

(NOT TO SCALE)



TYPICAL VALVE VAULT DETAIL (3 / 2 | 4)

(NOT TO SCALE)

NOTE:

VALVE STATION TO BE CONSTRUCTED AS NEEDED TO ADJUST GAS FLOWS, AND TO SEPARATE STAGES OF GAS SYSTEM INSTALLATION.

GENERAL NOTES:

1. EXACT LAYOUT AND DIMENSIONS MAY CHANGE DURING CONSTRUCTION TO ACCOMODATE FIELD CONDITIONS.

PRINTED 07-30-96

JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE: UNDERGROUND HEADER DETAILS

PROJECT TITLE: PRELIMINARY DESIGN LANDFILL GAS RECOVERY SYSTEM 122nd STREET LANDFILL CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER: ZAHREN ALTERNATIVE POWER CORPORATION P.O. BOX 7,124 SILLS ROAD YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR: LAND AND LAKES COMPANY 123 N. NORTHWEST HIGHWAY P.O. BOX 778 PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
2080 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2847

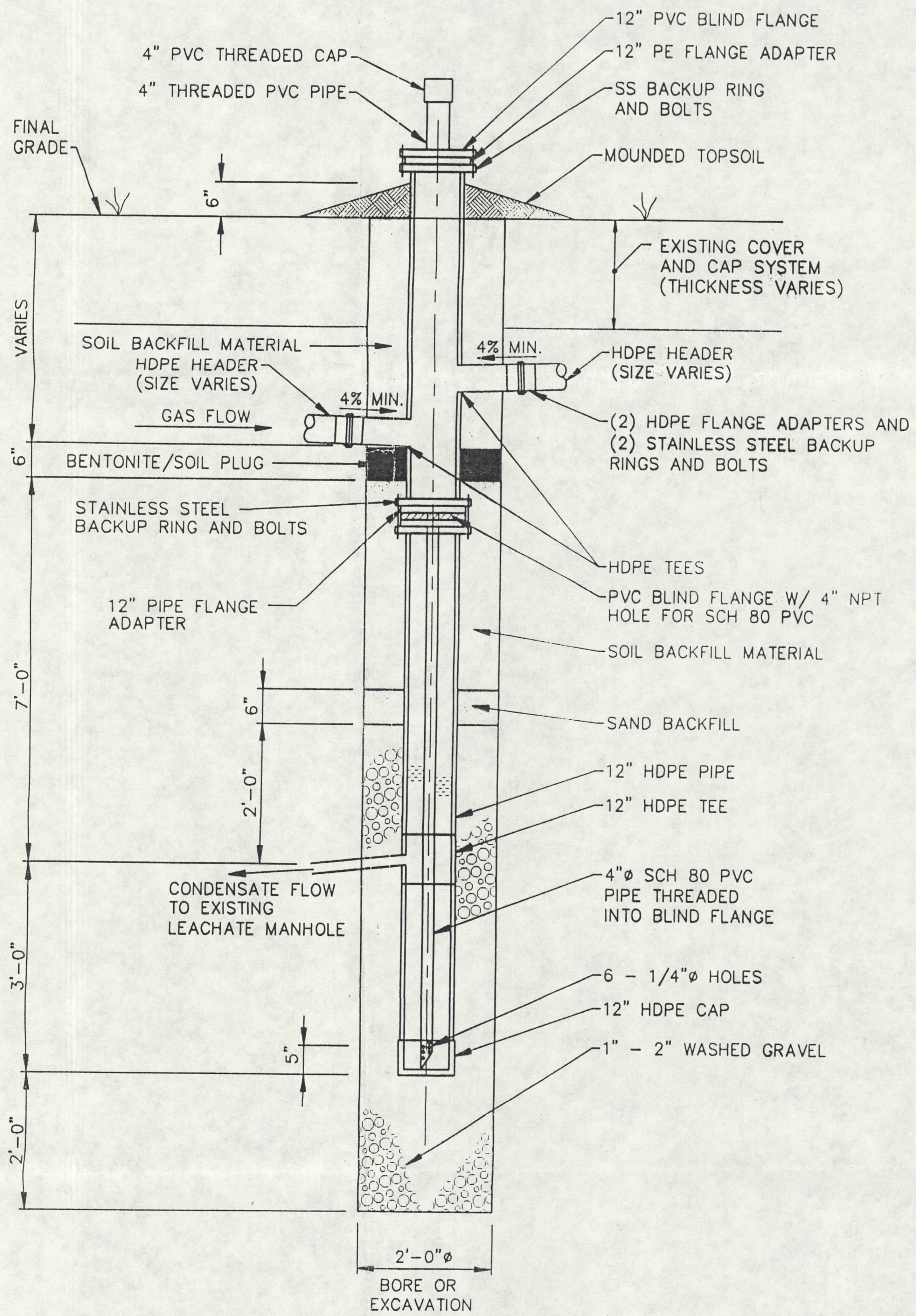
PROJ. NO.: 0595037.00 | DWN. BY: FDB | Q/A RVW BY: JJW
DSN. BY: FDB | CHK. BY: CES

CADD FILE: STDDET1

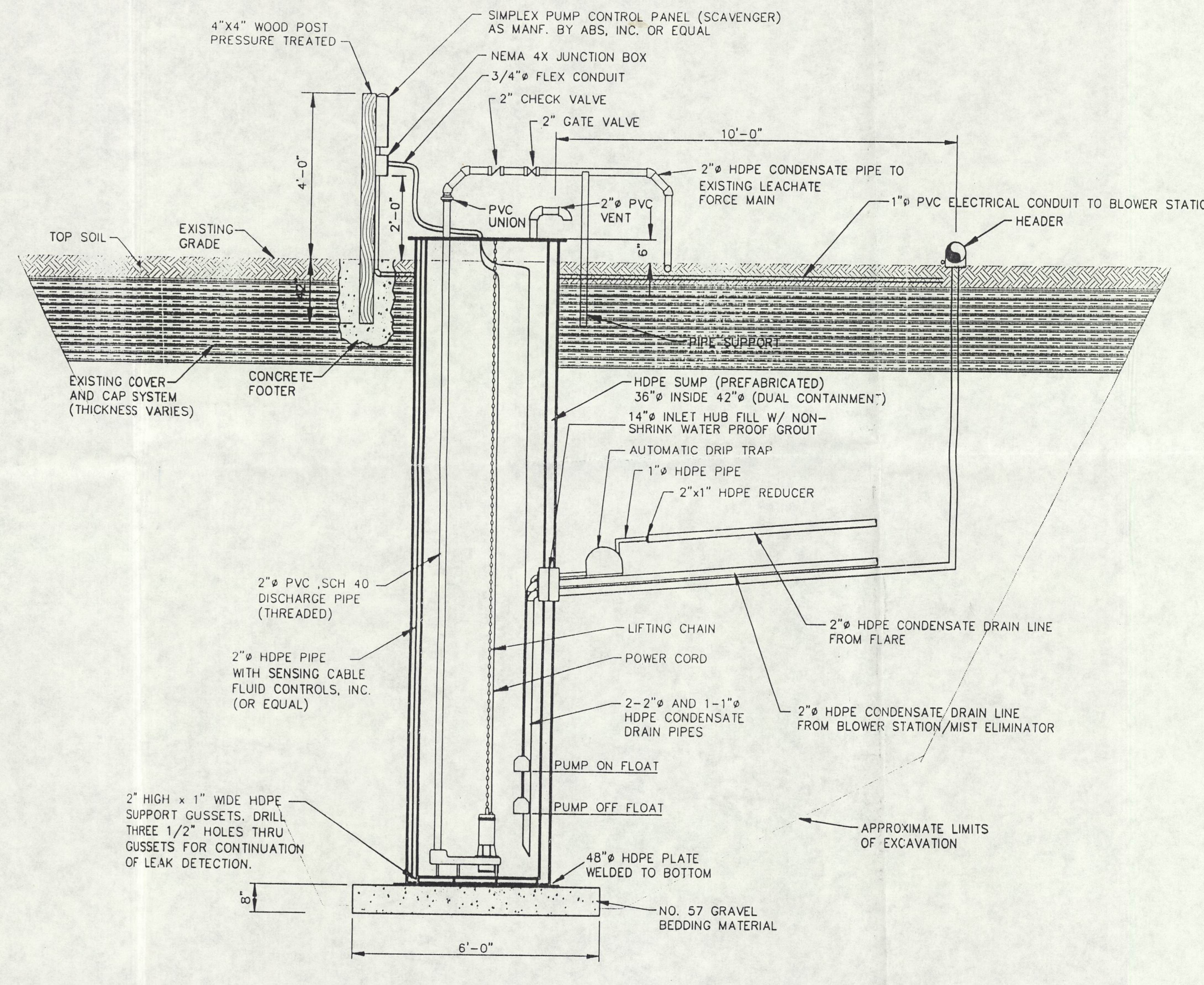
DATE: APRIL 18, 1996

SCALE: AS SHOWN

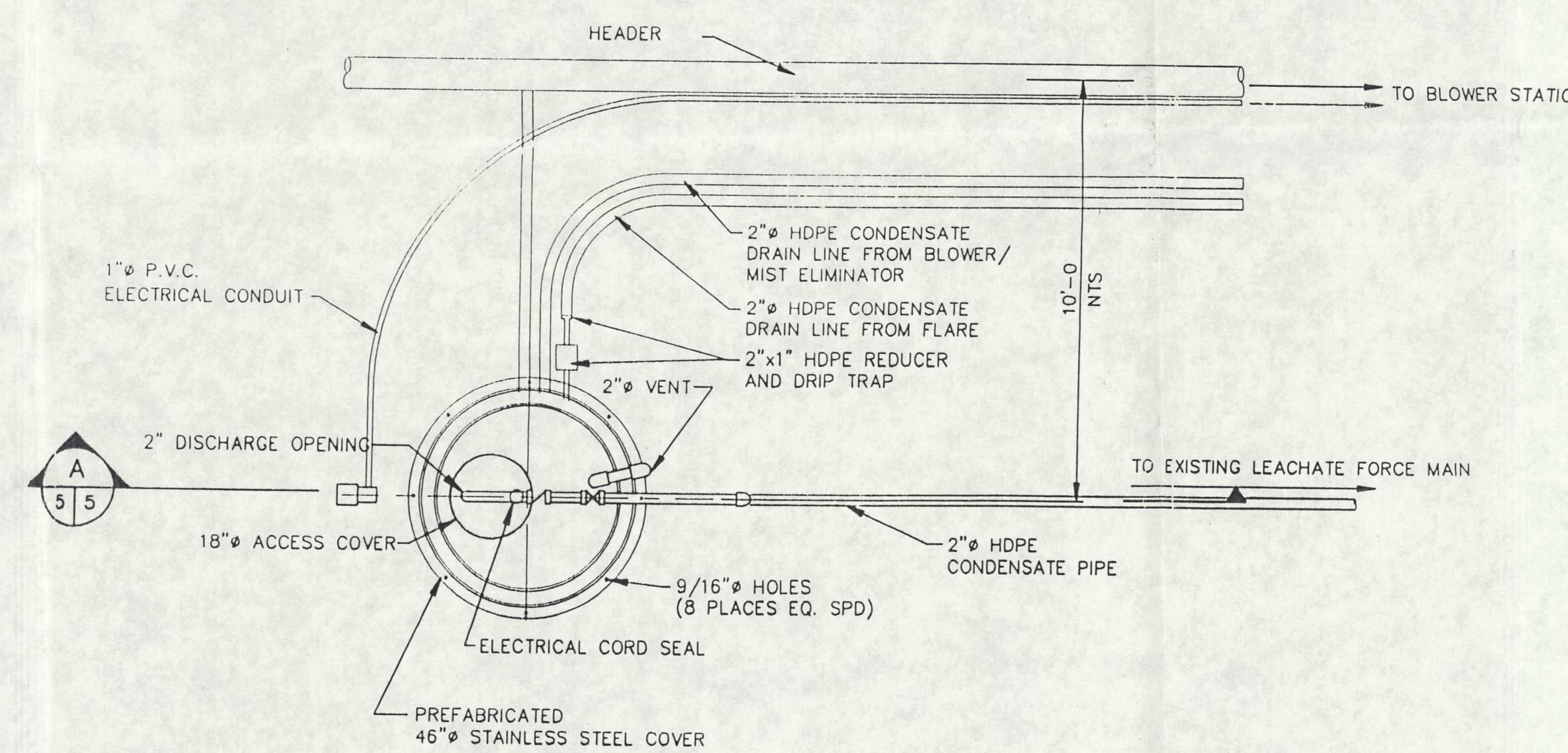
DRAWING NO. 4 of 8



TYPICAL CONDENSATE TRAP DETAIL (2 / 2 5)
(NOT TO SCALE)



SECTION (A / 5 5)
N.T.S.



CONDENSATE SUMP (1 / 2,3 5)
N.T.S.

NOTES:
1. ALL PIPE WILL BE DUAL-CONTAINMENT HDPE PIPE, FLUID CONTROLS, INC. (OR EQUAL).
2. LEAK DETECTION SENSING CABLE WILL BE TRACE TEK LEAK DETECTION SYSTEM, FLUID CONTROLS,INC (OR EQUAL).

PRINTED 07-30-96

JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE
CONDENSATE DETAILS (UNDERGROUND TRENCH)

PROJECT TITLE
PRELIMINARY DESIGN
LANDFILL GAS RECOVERY SYSTEM
122nd STREET LANDFILL
CHICAGO, ILLINOIS

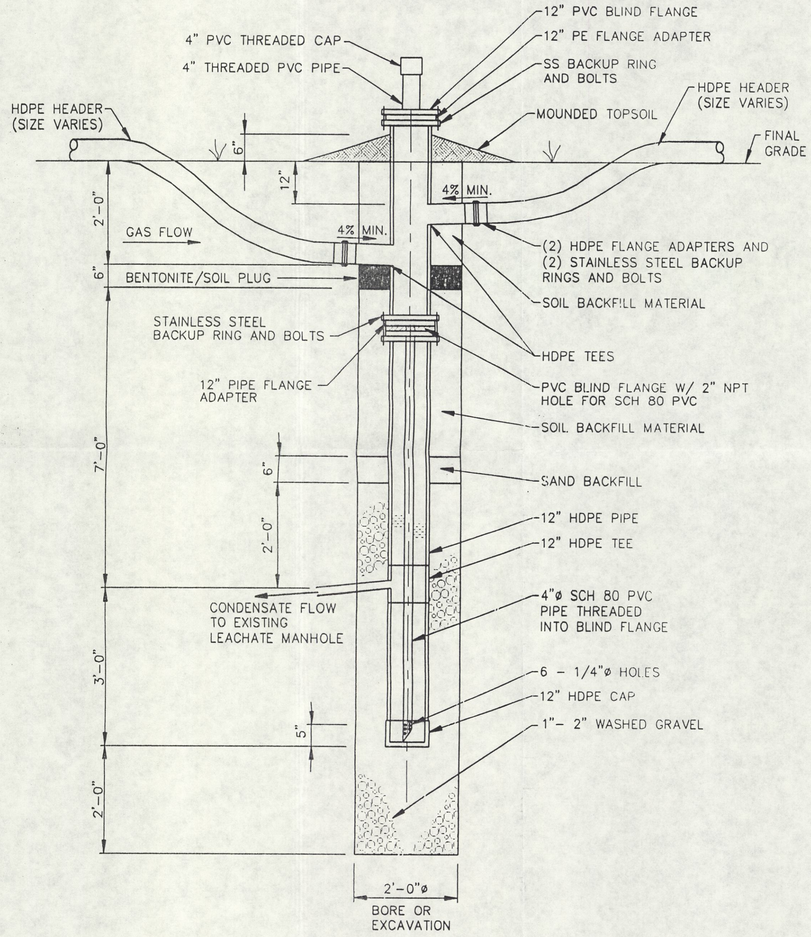
GAS SYSTEM DEVELOPER:
ZAUREN ALTERNATIVE POWER CORPORATION
P.O. BOX 7,124 SILLS ROAD
YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR:
LAND AND LAKES COMPANY
123 N. NORTHWEST HIGHWAY
P.O. BOX 778
PARK RIDGE, ILLINOIS 60068-0778

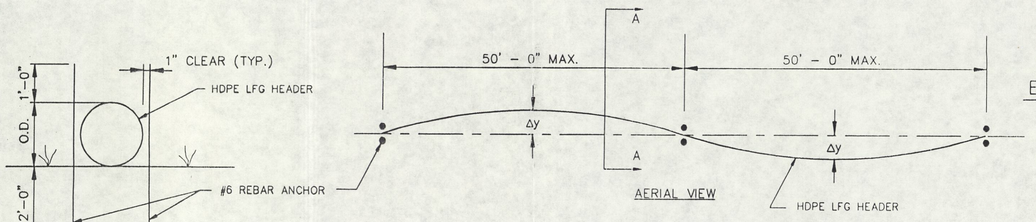
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2847

PROJ. NO.	DWN. BY:	Q/A RVW BY:
0595037.00	FDB	JJW
DSN. BY: FDB	CHK. BY: CES	

CADD FILE: STDDET2B
DATE: APRIL 18, 1996
SCALE: AS SHOWN
DRAWING NO. 5 of 8



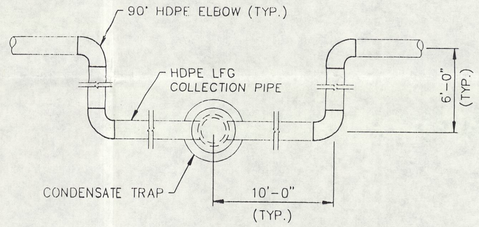
TYPICAL CONDENSATE TRAP ABOVE GROUND DETAIL (5 / 2 | 6)
(NOT TO SCALE)



NOTES:

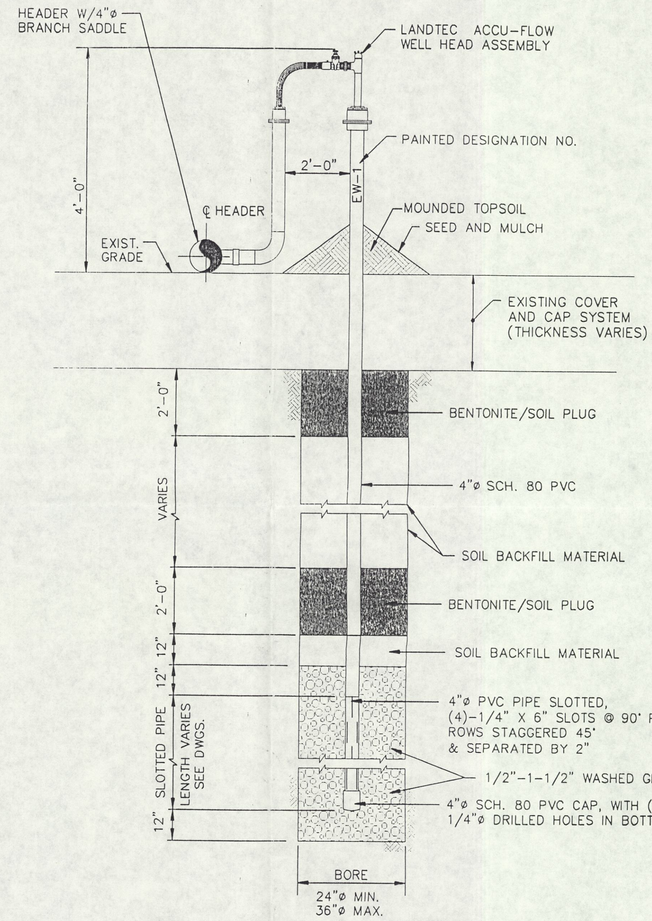
1. DUE TO THERMAL EXPANSION AND CONTRACTION OF HDPE PIPE, LFG PIPE SHALL BE INSTALLED IN A SNAKED POSITION. CONTRACTOR SHALL MAKE ALLOWANCE FOR EXTRA LENGTH OF PIPE.
2. Δy VARIES DEPENDING ON THE OUTSIDE TEMPERATURE
3. PIPE SHALL BE INSTALLED TO PROVIDE A MINIMUM SLOPE OF 3%

ABOVE GROUND HDPE PIPE SNAKING DETAIL (4 / 2 | 6)
(NOT TO SCALE)



PLAN VIEW

EXPANSION LOOP AT CONDENSATE TRAP DETAIL (2 / 2 | 6)
(NOT TO SCALE)



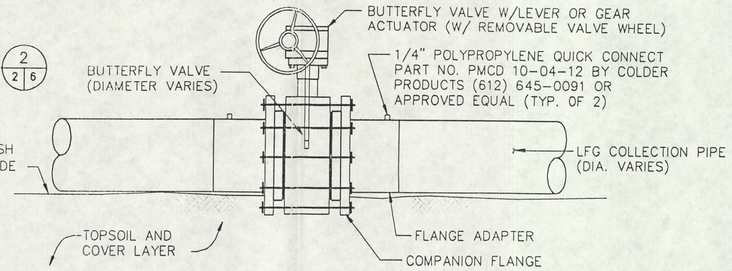
TYPICAL EXTRACTION WELL ABOVE GROUND DETAIL (1 / 2 | 6)
(NOT TO SCALE)

NOTES:

1. BRANCH SHALL BE ROTATED AS REQ'D.
2. ALL LATERALS SHALL BE 4"ø HDPE PIPE.

GENERAL NOTES:

1. EXACT LAYOUT AND DIMENSIONS MAY CHANGE DURING CONSTRUCTION TO ACCOMODATE FIELD CONDITIONS.



ISOLATION VALVE DETAIL (3 / 2 | 6)
(NOT TO SCALE)

PRINTED 07-30-96

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE: ABOVEGROUND HEADER DETAILS

PROJECT TITLE: PRELIMINARY DESIGN LANDFILL GAS RECOVERY SYSTEM 122nd STREET LANDFILL CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER:
ZANKER ALTERNATIVE ENERGY CORPORATION
P.O. BOX 7,124 SILLS ROAD
YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR:
LAND AND LAKES COMPANY
123 N. NORTHWEST HIGHWAY
P.O. BOX 778
PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2547

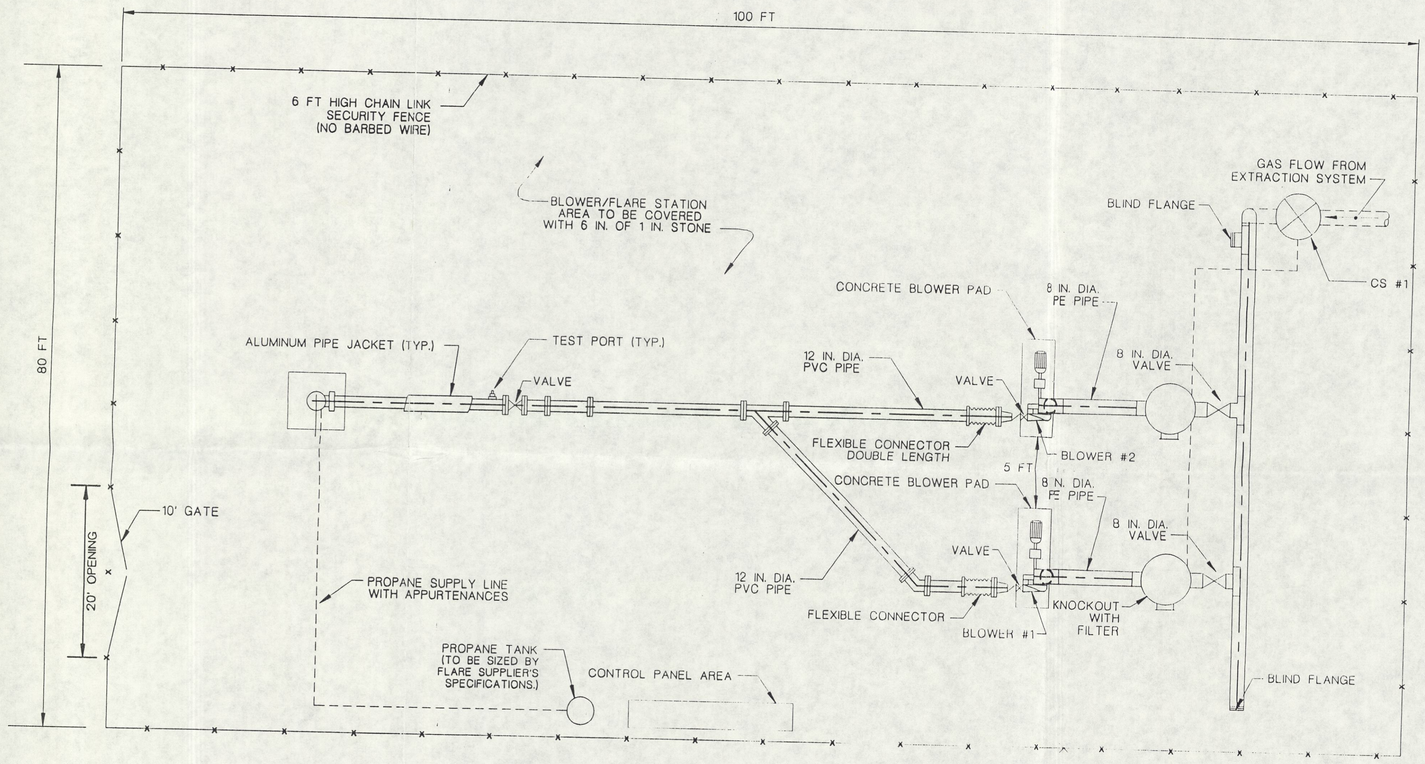
PROJ. NO. 05950337.00 | DWG. BY: FDB | CHK. BY: CES | O/A RVW BY: JWH | DSK. BY: FDB

CADD FILE: STDDET32

DATE: APRIL 18, 1996

SCALE: AS SHOWN

DRAWING NO. 6 of 8



NOTE:
FLARE SUPPLIER TO PROVIDE DESIGN AND STRUCTURAL CALCULATIONS FOR FLARE PAD

ELEVATION

BLOWER/FLARE STATION
(NOT TO SCALE)

GENERAL NOTES:

1. EXACT LAYOUT AND DIMENSIONS MAY CHANGE DURING CONSTRUCTION TO ACCOMODATE FIELD CONDITIONS.

NOTES:

1. ALL PE PIPE SHALL BE SDR 17.
2. ALL PVC PIPE SHALL BE SCHEDULE 80.
3. ALL PIPE SIZES SHOWN ARE MINIMUMS.

PRINTED 07-30-96

JAMES J. WALSH
NO. 062-043300
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/96	FDB

SHEET TITLE: BLOWER/FLARE STATION

PROJECT TITLE:
PRELIMINARY DESIGN
LANDFILL GAS RECOVERY SYSTEM
122nd STREET LANDFILL
CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER:
ALTERNATIVE POWER CORPORATION
P.O. BOX 7,124 SILLS ROAD
YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR:
LAND AND LAKES COMPANY
123 N. NORTHWEST HIGHWAY
P.O. BOX 778
PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
2000 HEADING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-6353 FAX NO. (513) 421-2847

PROJ. NO. 0595037.00
DSN. BY: FDB
DWN. BY: FDB
CHK. BY: CES
QA/QC BY: JJW

CADD FILE: STDDET4
DATE: APRIL 18, 1996
SCALE: AS SHOWN
DRAWING NO. 7 of 8

EARTHWORK

1. PIPE BEDDING SHALL BE USED WHENEVER THE COLLECTION PIPING RUNS BELOW GRADE. PIPE BEDDING SHALL BE CLEAN, DRY SAND, FREE OF CLAY, MUCK, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL BE 6 INCHES MINIMUM THICKNESS BELOW AND 8 INCHES ON BOTH SIDES OF PIPE TO THE SPRINGLINE OF THE PIPE.

2. SOIL BACKFILL MATERIAL SHALL POSSESS SIMILAR PROPERTIES TO THE EXISTING LANDFILL COVER SOIL. EXCAVATED MATERIAL THAT IS CLEAN, FREE OF LARGE OBSTRUCTIONS AND REFUSE, MAY BE USED.

LFG EXTRACTION WELLS

1. GRAVEL BACKFILL SHALL BE WASHED CLEAN, HARD, DURABLE, CRUSHED STONE OR GRAVEL. GRAVEL BACKFILL SIZE SHALL BE 1/2" TO 1 1/2" WASHED STONE.

2. BACKFILL MATERIAL SHALL BE CLEAN, GRANULAR FILL FREE OF THE FOLLOWING: STONES LARGER THAN 2 INCH, CONSTRUCTION DEBRIS, REFUSE, MUCK, SOFT CLAY, LOAM, SPONGY MATERIAL, VEGETATION/ ORGANIC MATTER, OR ANGULAR ROCKS.

3. BENTONITE/SOIL PLUG SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND SHALL BE PREPARED WITH 5 POUNDS OF BENTONITE PER CUBIC FOOT OF SOIL. THE SOIL MATERIAL SHALL BE FREE OF STONES LARGER THAN 1 INCH. IMMEDIATELY PRIOR TO PLACEMENT, THE MIXTURE SHALL BE WETTED TO A THICK MUD CONSISTENCY.

4. THE CONTRACTOR SHALL KEEP DETAILED WELL LOGS FOR ALL WELLS DRILLED. LOGS SHALL INCLUDE: TOTAL DEPTH OF WELL, LENGTH OF SLOTTED PIPE, STATIC WATER LEVEL, DESCRIPTION OF THE WASTE STRATA BY INDICATING ITS DEPTH AND THICKNESS, AND THE OCCURENCE OF ANY WATER BEARING ZONES. WELL LOGS SHALL BE SUBMITTED TO THE ENGINEER.

5. THE BORE FOR THE WELL SHALL BE STRAIGHT AND THE WELL PIPE SHALL BE INSTALLED IN THE CENTER OF THE BORE HOLE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN THE WELL PIPE VERTICALLY PLUMB DURING THE BACKFILL OPERATION OF THE BORED HOLE. SLOTTED PIPE MAY BE FIELD FABRICATED OR SUPPLIED BY THE FACTORY.

6. VERTICAL WELL PIPE SECTIONS SHALL BE JOINED BY PVC COUPLINGS. LAG SCREWS SHALL BE USED WITH SOCKET TYPE FITTINGS TO SECURE THE PIPE DURING WELL PLACEMENT. 4 LAG SCREWS SHALL BE INSTALLED FOR EACH COUPLING AND EACH SCREW SHALL HAVE A LENGTH EQUAL TO THE SUM OF THE PIPE AND FITTING WALL THICKNESSES.

7. WELLHEAD ASSEMBLIES SHALL BE ACCU-FLO SERIES 150 MANUFACTURED BY LANDTEC, LOS ANGELES, CA., OR EQUAL.

8. EACH WELLHEAD SHALL HAVE ITS NUMBER STENCILED ON ITS SIDE.

10. IF WATER IS ENCOUNTERED IN A BORING, THE ENGINEER MAY DECREASE THE DEPTH OF THE BORING AND SLOTTED PIPE, CONTINUE DRILLING TO DETERMINE IF A PERCHED WATER LAYER EXISTS, OR RELOCATE THE WELL.

PIPES AND FITTINGS

1. HDPE LFG HEADER PIPE SHALL BE SDR-17 WITH TYPE 3408 RESIN.

2. HDPE PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THESE DRAWINGS, WHICHEVER IS MORE STRINGENT.

3. HDPE PIPE SHALL BE JOINED BY THE FOLLOWING METHODS:

   - UNLESS OTHERWISE STATED, HDPE SHALL BE JOINED BY HEAT FUSION AS SPECIFIED IN THE PIPE MANUFACTURER'S INSTRUCTIONS.
   - HDPE FLANGE ADAPTERS SHALL BE EMPLOYED WHERE INDICATED ON THE DRAWINGS. FLANGES FOR HDPE PIPE SHALL BE CONVOLUTED DUCTILE IRON BACKUP RINGS WITH EPOXY COATING AND A MINIMUM THICKNESS OF 1 INCH, AS MANUFACTURED BY IMPROVED PIPING PRODUCTS, INC., OF ORINDA, CALIFORNIA OR APPROVED EQUAL. BACKUP RINGS SHALL BE FINISHED WITH ZINC CHROMATE PRIMER.

4. BOLTS AND STUDS SHALL BE ASTM A-276, TYPE 316 STAINLESS STEEL. NUTS AND WASHERS SHALL BE ASTM A-276, TYPE 304 STAINLESS STEEL.

5. STUDS, NOT BOLTS, SHALL BE USED TO CONNECT FLANGES. THE STUDS SHALL BE ASTM A-276, TYPE 316 STAINLESS STEEL. THE STUDS SHALL BE FASTENED WITH HEAVY, SEMI-FINISHED HEXAGON NUTS AND COMPLETELY COATED JUST PRIOR TO INSTALLATION WITH AN ANTI-SEIZE COMPOUND SUCH AS MANUFACTURED BY KOPR-KOTE OR APPROVED EQUAL.

6. THE CONTRACTOR SHALL TEST ALL LFG COLLECTION PIPE WITH PRESSURIZED AIR (5 PSI) TO DETECT ANY LEAKS IN THE PIPING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS OR RESTORATIONS MADE IN AREAS WHERE LEAKS ARE DISCOVERED. TEST SEGMENTS SHALL NOT EXCEED 2000 LINEAR FEET.

7. PVC SHALL BE SCHEDULE 80 ALIGNED TO MINIMIZE LINEAR DEVIATIONS AT THE JOINTS AND CONNECTED BY PVC SOCKET FITTINGS. A COATING OF CPS PRIMER SHALL BE APPLIED TO THE INTERIOR SURFACE OF THE FITTING SOCKET PRIOR TO THE APPLICATION OF SOLVENT CEMENT.

8. FLEXIBLE PVC PIPE AND CLAMPS SHALL BE AS MANUFACTURED BY KANAFLEX IN COMPTON, CA., OR APPROVED EQUAL.

9. ALL KANAFLEX HOSE OR APPROVED EQUAL AND PVC PIPE EXPOSED TO WEATHER SHALL BE UV RESISANT.

10. MONITORING PORTS SHALL BE 1/4 INCH POLYPROPYLENE QUICK CONNECT PART NO. PMCD 10-04-12 BY COLDER PRODUCTS, (612)645-0091 OR EQUAL.

11. PVC BUTTERFLY VALVES SHALL BE WAFER STYLE WITH NITRILE SEAT. GASKET FOR PHASE I BUTTERFLY VALVES SHALL BE FLOURINATED ELASTOMERS CONFORMING TO ASTM D-2000, SUITABLE FOR THE PRESSURE AND TEMPERATURE RANGES ENCOUNTERED, AND COMPATIBLE WITH FLANGE FACES. PHASE I PVC BUTTERFLY VALVES SHALL BE MANUFACTURED BY ASAHI/ AMERICA, BEDFORD, MA, OR APPROVED EQUAL. PHASE II POLYETHYLENE BUTTERFLY VALVES SHALL BE MANUFACTURED BY SHAFER MOLDING, PERRYTOWN, TX. OR APPROVED EQUAL.

JAMES J. WALSH 062-043100 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

REV.	DATE	DESCRIPTION	CK. BY
1	7/96	PER IEPA COMMENTS 6/95	FDB

SHEET TITLE: CONSTRUCTION NOTES

PROJECT TITLE: PRELIMINARY DESIGN LANDFILL GAS RECOVERY SYSTEM 122nd STREET LANDFILL CHICAGO, ILLINOIS

GAS SYSTEM DEVELOPER: ZAUREN ALTERNATIVE POWER CORPORATION P.O. BOX 7,124 SILLS ROAD YAPHANK, NY 11980

LANDFILL OWNER/OPERATOR: LAND AND LAKES COMPANY 123 N. NORTHWEST HIGHWAY P.O. BOX 778 PARK RIDGE, ILLINOIS 60068-0778

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2847

PROJ. NO. 0595037.00 | DWN. BY: FDB | Q/A RVW BY: JJW
DSN. BY: FDB | CHK. BY: CES

CADD FILE: STDDET5

DATE: APRIL 18, 1996

SCALE: AS SHOWN

PRINTED 07-30-96

DRAWING NO. 8 of 8

2

(1 OF 2)

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

September 7, 1995

Land and Lakes Company
Attn: James J. Cowhey, Jr., President
Post Office Box 778
Park Ridge, Illinois 60068

Re: 0316000034 -- Cook County
Land and Lakes #3
Permit No. 1978-2-OP
Supplemental Permit No. 1995-246-SP
Log. No. 1995-246
Permit File

Dear Mr. Cowhey:

Supplemental permit is hereby granted to Stoney Island Reclamation Company as owner and Land and Lakes Company as operator, to modify operation of the above referenced facility all in accordance with the plans prepared by Land and Lakes Company dated July 6, 1995 that were received July 7, 1995 with an addendum received July 19, 1995. Final plans, specifications, application and supporting documents as submitted and approved shall constitute part of this permit and are identified on the records of the Illinois Environmental Protection Agency, Bureau of Land by the permit number(s) and log number(s) designated in the heading above.

This supplemental permit approves operation in Cell VI.

The permit is issued subject to the standard conditions attached hereto and incorporated herein by reference, and further subject to the following special conditions. In case of conflict between the application and plans submitted and these special conditions, the special conditions of this permit shall govern.

1. A permit is hereby granted to operate in Phase II, Cell VI. Waste may now be placed in the area certified constructed by Application Log No. 1995-246. Waste may be placed in the remaining portion(s) of the cell after construction is documented and reported in compliance with the conditions of this permit.

2. A registered professional engineer shall certify that the floor and sidewalls of each additional portion of the cell have been constructed in accordance with the approved plans, specifications and quality assurance program. All construction reports and supporting documentation shall be included the certification.

3. Permeability tests of undisturbed samples (shelby tube) shall be conducted pursuant to the approved construction quality assurance plan at a rate of one test per 5,000 cubic yards placed on the compacted clay portion of the liner.

4. Prior to placement of waste in each new area constructed in Cell VI, the City of Chicago, Department of the Environment, telephone 312/744-7606, shall be contacted in order to schedule an inspection of the features of the site as built. This request for inspection and the delivery of the required construction certification with supporting documentation to both the IEPA Bureau of Land, Permit Section, and the City of Chicago, Department of the Environment, must be made at least fifteen (15) calendar days prior to waste disposal in the subject area. The Agency is not obligated to approve the construction or certification. The operator may dispose of refuse in the area after the fifteen (15) day period if, having complied with the terms of this condition, the operator is not informed of a problem by the Agency or its agents.

5. The closure and post-closure cost estimates dated July 6, 1995 that were received July 7, 1995 with an addendum received July 19, 1995, are approved in accordance with 35 Ill. Adm. Code, Subtitle G, Part 807. The current cost estimate for closure and post-closure care total $2,770,932.00.

6. Financial assurance shall be maintained by the operator in accordance with 35 Ill. Adm. Code, Subtitle G, Part 807, Subpart F. Pursuant to 35 Ill. Adm. Code 807.603(b) the operator must increase the total amount of financial assurance to equal the current cost estimate within 90 days of the issuance of this permit.

7. This site is subject to a minimum post-closure care period of 30 years. The post-closure care period has not yet begun.

8. This facility has been required to maintain a gas monitoring program since Interim Permit No. 1993-404-IN was issued on October 1, 1993. (See Condition No. 6 of attached Section I S807) However, a question has arisen regarding the construction schedule for installation of the monitoring system. Therefore, by this condition it is established that the gas monitoring system, including all external (outside of waste) monitoring probes for the facility, shall be installed within 90 days from the date of this supplemental permit.

9. The permanent leachate force main approved by Supplemental Permit No. 1994-390-SP shall be installed by the end of 1996.

10. This permit is issued with the expressed understanding that no process discharge to Waters of the State or to a sanitary sewer will occur from these facilities, except as authorized by a permit from the Bureau of Water (BOW).

11. This application has been approved pursuant to the requirements for a landfill which is currently subject to 35 Ill. Adm. Code 807. The application has not been reviewed with respect to the standards of 35 Ill. Adm. Code 811 and this supplemental permit does not constitute a partial approval of the significant modification required by 35 Ill. Adm. Code 814.104.

Except as modified in the above documents, the site shall be operated in accordance with the terms and conditions of Permit No. 1972-2-OP, and any subsequent supplemental permits.

The original and two (2) copies of all certifications, logs or reports and three (3) copies of groundwater monitoring chemical analysis forms which are required to be submitted to the Agency by the permittee should be mailed to the following address:

Illinois Environmental Protection Agency
Planning and Reporting Section
Bureau of Land -- #24
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

Within 35 days after the notification of the final permit decision the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Agency, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Agency within the 35-day initial appeal period.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

KES
ECB:RRS:bjh\951161.WPD
RRS

cc: Neil Williams, P.E., GeoSyntec Consultants
City of Chicago, Department of the Environment

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

July 1, 1979

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Divisions of Water Pollution Control, Air Pollution Control, Public Water Supplies, and Land and Noise Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newely issued permit, this permit will expire two years after date of issuance unless construction or development on this project has started on or prior to that date.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinos Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:

   a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.

   b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit.

   c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.

d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

d. does not take into consideration or attest to the structural stability of any units or parts of the project;

e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the Agency before the facility or equipment covered by this permit is placed into operation.

7. These standard conditions shall prevail unless modified by special conditions.

8. The Agency may file a compliant with the Board for modification, suspension or revocation of a permit:

a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed; or

b. upon finding that any standard or special conditions have been violated; or

c. upon any violation of the Environmental Protection Act or any Rule or Regulation effective thereunder as a result of the construction or development authorized by this permit.

MLK:dh/17

Land and Lakes Company

23 N. Northwest Highway
P.O. Box 778
Park Ridge, Illinois 60068-0778

(708) 825-5000
Fax (708) 825-0887

July 6, 1995

Mr. Edwin Bakowski
Illinois Environmental Protection Agency
Division of Land Pollution Control
Post Office Box 19276
2200 Churchill Road
Springfield, Illinois 62794

FEDERAL EXPRESS
#6457998035

Re: Land and Lakes #3
#0316000034 - Cook County
Operating Permit Application - Cell VI
Developmental Permit #1994-309-SP

Dear Mr. Bakowski:

Enclosed are one original and two copies of the operating permit application for Phase 1a of Cell VI of Phase II for the above-referenced facility. Cell VI has been constructed in accordance with the requirements of developmental permit #1994-390-SP issued on February 10, 1995. The cell has been constructed in accordance with the plans and with the approval of the third party CQA engineer, GeoSyntec Consultants. All required construction quality assurance (CQA) information is enclosed.

In addition to the required construction quality assurance information, Land and Lakes Company has also included a revised closure cost and post-closure cost for the entire 122nd Street facility. These revised costs include a geosynthetic cap for Cell VI. In accordance with conversations between Mr. Ron Steward and myself, Land and Lakes Company has developed these closure costs under three separate scenarios. Mr. Ron Steward stated that the regulation/legislation regarding closure and post-closure cost estimates are in transition and that three separate scenarios are possible.

Scenario A involves the approval of recent State legislation that mirrors Federal Subtitle D Financial Assurance provisions and would not require 30 year post-closure estimates to be posted until April 9, 1996. Therefore, 15 year post-closure cost estimates would be required until April 9, 1996.

Scenario B involves the approval of a 4% present value discount per year on post-closure estimates for 30 years.

Scenario C includes no present value discount for 30 years post-closure. As Mr. Ron Steward stated, the IEPA will choose the scenario that reflects the regulations and legislation that are in effect at the time that the Cell VI application permit is approved.

Also as discussed previously, there are two components (revised gas monitoring system and permanent leachate force main) of developmental permit #1994-390-SP that did not include schedules for installation. Land and Lakes Company is currently monitoring landfill gas in accordance with interim permit requirements and is currently transferring leachate via a previously approved leachate conveyance line. Land and Lakes Company requests that the gas monitoring system as proposed in supplemental permit 1994-390-SP be installed within 120 days of the issuance of the operating permit for cell VI and that the permanent leachate force main as proposed in supplemental permit 1994-390-SP be installed by the end of construction season 1996. Mr. Ron Steward stated that the Agency will include as conditions to this operating permit schedules for installation of the revised gas monitoring system and permanent leachate force main approved by supplemental permit #1994-390-SP.

If you require additional information or have any comments, please call me at (708) 825-5000.

Sincerely,

Larry G. Emerson

Larry G. Emerson, P.E.
Director, Engineering and Permits

LGE:bmj

Enclosure

cc: Mr. Harry Tomlinson - GeoSyntec Consultants

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

'ary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

General Application for Permit (LPC-PA1)

This form must be used for any application for permit from the Bureau of Land, except for waste stream applications and applications for the composting of landscape waste only. One original and two (2) photocopies, or three (3) if applicable, of all permit application forms must be submitted. Attach the original and appropriate number of copies of any necessary plans, specifications, reports, etc. to fully support and describe the activities or modifications being proposed. If necessary, attach sufficient information to demonstrate compliance with all applicable RCRA requirements. Incomplete applications will be rejected. Please refer to the instructions for further guidance.

Note: Permit applications which are to be hand-delivered to the Bureau of Land, Permit Section must be delivered to the 1240 North Ninth Street location between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print legibly.

I. SITE IDENTIFICATION

Name: Land & Lakes #3 Site # (IEPA): 0 3 1 6 0 0 0 0 3 4

Physical Site Location (street, road, etc.): 2000 East 122nd Street

City, Zip Code: Chicago, Illinois 60633 County: Cook

Existing DE/OP Permit Nos. (if applicable): 1978-2-OP

II. OWNER/OPERATOR IDENTIFICATION

	OWNER	OPERATOR
	Stony Island Reclamation	Land and Lakes Company
Address:	123 N. Northwest Highway	Post Office Box 778
	Park Ridge, Illinois 60068	Park Ridge, Illinois 60068
Contact Name:	James J. Cowhey, Jr.	James J. Cowhey, Jr.
Phone #:	(708) 825-5000	(708) 825-5000

III. PERMIT APPLICATION IDENTIFICATION

TYPE SUBMISSION/REVIEW PERIOD:

- ___ New Landfill/180 days (35 IAC Part 813)
- ___ Landfill Expansion/180 days (35 IAC Part 813)
- ___ 1st Sign. Mod/90 days (35 IAC Part 814)
- ___ Sign. Mod to Operate/90 days (35 IAC Part 813)
- ___ Other Sign. Mod/90 days (35 IAC Part 813)
- ___ Renewal of Landfill/90 days (35 IAC Part 813)
- ___ Developmental/90 days (35 IAC Part 807)
- X Operating/45 days (35 IAC Part 807)
- ___ Supplemental/90 days (35 IAC Part 807)
- ___ Permit Transfer/90 days (35 IAC Part 807)
- ___ Generic/90 days

TYPE FACILITY:

- X Landfill
- ___ Land Treatment
- ___ Transfer Station
- ___ Treatment
- ___ Storage
- ___ Incinerator
- ___ Composting
- ___ Recycling/Reclamation
- ___ Other (Specify)

TYPE WASTE:

- X General Municipal Refuse
- ___ Hazardous
- X Special (Non-hazardous)
- ___ Chemical Only (exc. putrescible)
- ___ Inert Only (exc. chemical and putrescible)
- ___ Used Oil
- ___ Solvents
- ___ Landscape/Yard Waste
- ___ Other (Specify)

DESCRIPTION OF THIS PERMIT REQUEST: (Include a brief narrative description here.)

Operating permit for construction Phase 1a of Cell VI of Phase II

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center

IV. COMPLETENESS REQUIREMENTS

The following items must be checked Yes, No or N/A. Each item will be reviewed by the log clerk. Blank items will result in rejection of the application. Please refer to the instructions for further guidance.

1. Have all public notice letters (LPC-PA16) been mailed and are copies and supporting documentation enclosed? — X Yes ___ No ___ N/A

2. a. Is the Siting Certification form (LPC-PA8) completed and enclosed? — ___ Yes ___ No X N/A

   b. Is siting approval currently under litigation? — ___ Yes ___ No X N/A

3. a. Is a closure, and if necessary a post closure, plan covering these activities being submitted, or — ___ Yes X No ___ N/A

   b. has one already been approved? (Provide permit number 1993-095-SP.) — X Yes ___ No ___ N/A

4. a. For waste disposal sites only: Has any employee, owner, operator, officer or director of the owner or operator had a prior conduct certification denied, cancelled or revoked? — ___ Yes X No ___ N/A

   b. Have you included a demonstration of how you comply or intend to comply with 35 Ill. Adm. Code Part 745? OC#90035 Dated 6/28/93 — X Yes ___ No ___ N/A

5. a. Is land ownership held in beneficial trust? — ___ Yes X No ___ N/A

   b. If yes, is a beneficial trust certification form (LPC-PA9) completed and enclosed? — ___ Yes ___ No X N/A

6. a. Does the application contain information or proposals regarding the hydrogeology; groundwater monitoring, modeling or classification; a groundwater impact assessment; or vadose zone monitoring for which you are requesting approval? — ___ Yes ___ No X N/A

   b. If yes, have you submitted a third (3rd) copy of the application (4 total) and supporting documents?

V. SIGNATURES (Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable.)

All applications shall be signed by the person designated below or by a duly authorized representative of that person:

Corporation - By a principal executive officer of at least the level of vice-president.
Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above; and
2. is submitted with this application (a copy of a previously submitted authorization can be used).

I hereby affirm that all information contained in this Application is true and accurate to the best of my knowledge and belief.

Owner Signature: James J. Cowhey, Jr. Title: Vice President Date: 7-3-95

Owner FEIN or S.S. Number: 36-3000510

Operator Signature: James J. Cowhey, Jr. Title: Vice President Date: 7-3-95

Operator FEIN or S.S. Number: 36-2650080

Engineer Signature: Name: Neil D. Williams Ph.D., P.E. Date: 6/30/95

Engineer Address: GeoSyntec Consultants
621 N.W. 53rd Street, ste 650
Boca Raton, FL 33487

Engineer Seal: NEIL D. WILLIAMS 062-048329 REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS

Engineer Phone No.: (407 995-0900

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Agency rules and guidelines.

122nd Street Notification List

Mr. John M. "Jack" O'Malley
Cook County State's Attorney
118 N. Clark St., Room 434
Chicago, IL 60602

Mr. Glen E. Carr, Chief
Public Interest Bureau
500 Daley Center
Chicago, IL 60602

Mr. John H. Stroger, Jr.
County Board President
118 N. Clark St., Room 434
Chicago, IL 60602

Honorable Jack O'Connor
12307 S. Harlem, Suite 7
Palos Heights, IL 60463

City Clerk
City of Chicago
121 N LaSalle St
Chicago, IL 60602

Village Clerk
Village of Riverdale
325 W. 142nd St
Riverdale IL 60627-2332

City Clerk
City of Harvey
15320 Broadway
Harvey, IL 60426

Honorable Patrick O'Malley
5100 West 127th Street
Alsip, Illinois 60658

Village Clerk
Village of Dolton
14014 Park Ave.
Dolton, IL 60419

Village Clerk
Village of South Holland
16226 Wausau Avenue
South Holland, IL 60473

Village Clerk
Village of Burnham
13925 Entre Ave.
Burnham IL 60633

City Clerk
City of Calumet City
204 Pulaski Road
Calumet City IL 60409

Village Clerk
Village of Phoenix
15240 Vincennes Road
Phoenix IL 60425

Mr. Cecil Lue-Hing, D.Sc., P.E.
Director, Research & Devel.
Metro. Water Reclamation Dist.
of Greater Chicago
100 E Erie St.
Chicago, IL 60611

AFFIDAVIT

I, Susana Cruz, certify that on July 6, 1995, I mailed the attached letters to those persons identified on the attached list. First class postage was affixed to each letter.

Susana Cruz

July 6, 1995
Date

"OFFICIAL SEAL"
Barbara Jarecki
Notary Public, State of Illinois
My Commission Expires 11/14/98

Barbara Jarecki
Notary Public

Seal

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

NOTICE OF APPLICATION FOR PERMIT TO MANAGE WASTE (LPC-PA16)

Date: July 6, 1995

To Elected Officials and Concerned Citizens:

The purpose of this notice is to inform you that a permit application has been submitted to the IEPA, Bureau of Land, for a solid waste project described below. You are not obligated to respond to this notice, however, if you have any comments, please submit them in writing to the address below, or call the Permit Section at 217/524-3300, within twenty-one (21) days.

Illinois Environmental Protection AGency
Bureau of Land, Permit Section (#33)
2200 Churchill Road, Post Office Box 19276
Springfield, Illinois 62794-9276

The permit application, which is identified below, is for a project described at the bottom of this page.

SITE IDENTIFICATION

Site Name: Land and Lakes #3 Site # (IEPA): 0316000034

Address: 2000 East 122nd Street

City: Chicago County: Cook

TYPE PERMIT SUBMISSION:		TYPE FACILITY:		TYPE WASTE:	
New Landfill	___	Landfill	X	General Municipal Refuse	X
Landfill Expansion	___	Land Treatment	___	Hazardous	___
First Significant Modification	___	Transfer Station	___	Special (Non-Hazardous)	___
Significant Modification to Operate	___	Treatment Facility	___	Chemical Only (exc. putrescible)	___
Other Significant Modification	___	Storage	___	Inert Only (exc. chem. & putrescible)	___
Renewal of Landfill	___	Incinerator	___	Used Oil	___
Development	___	Composting	___	Solvents	___
Operating	X	Recycling/Reclamation	___	Landscape/Yard Waste	___
Supplemental	___	Other	___	Other (Specify ___)	___
Transfer	___				
Name Change	___				
Waste Stream	___				
Generic	___				

DESCRIPTION OF PROJECT: (For multiple waste stream applications, see reverse side).

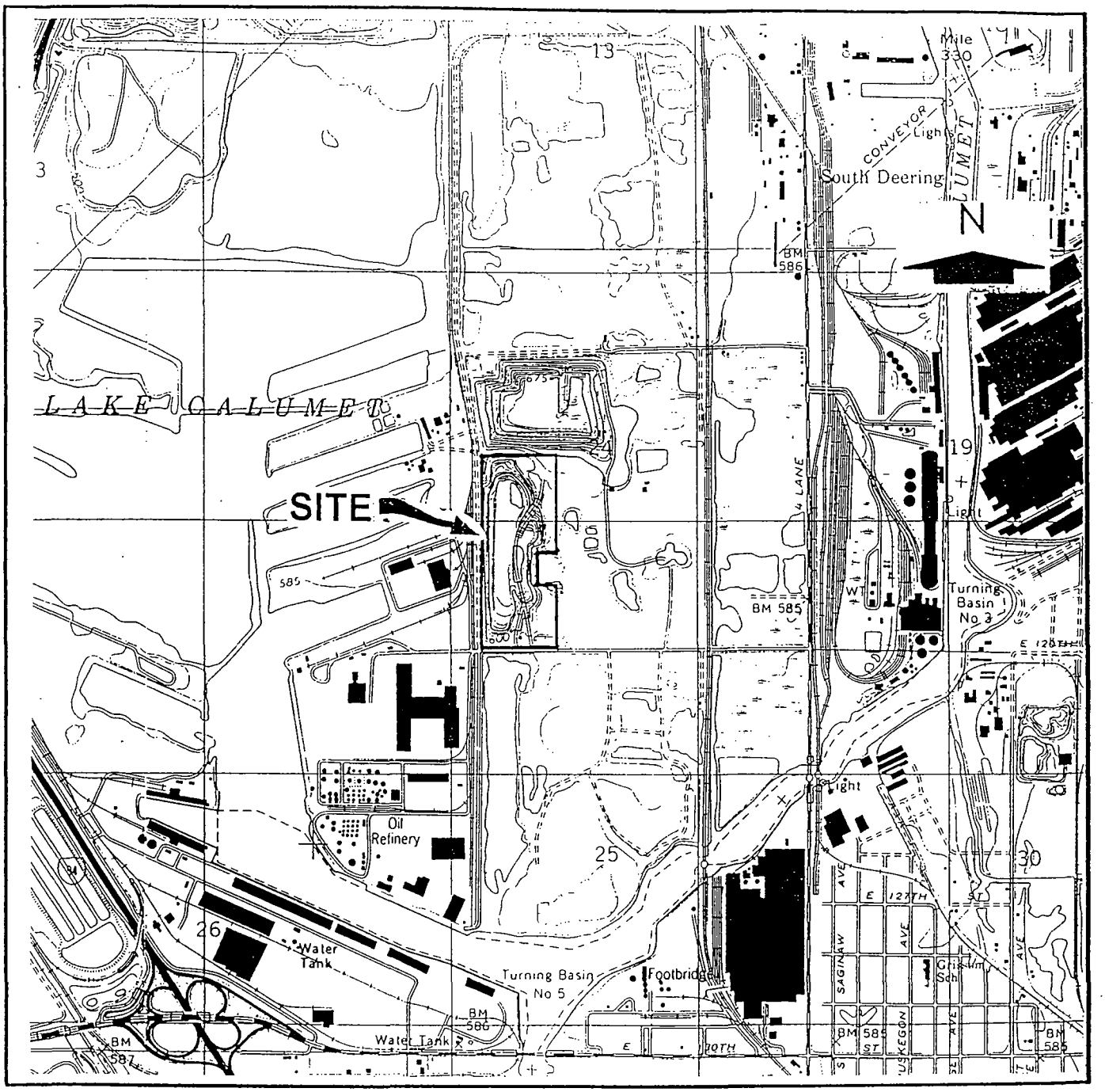
Operating permit for construction Phase Ia of Cell VI of Phase II.

Date: _____

	Generator Name	Waste Stream Identification Generic Name	Waste Class Hazardous/ Non-Hazardous
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

Please retain a copy for your own use.

LWE:CR:lat/sp/678Y,1-2



VICINITY MAP

0 2000 FEET

US GEOLOGICAL SURVEY
DENVER, COLORADO
LAKE CALUMET QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

Illinois Environmental Protection Agency · P.O. Box 19276, Springfield, IL 62794-9276

APPLICATION FOR OPERATING PERMIT (LPC-PA4)

I. Facility Identification:

Name of Facility: Land and Lakes No.3

Site Number: 0 3 1 6 0 0 0 0 3 4

Developmental Permit Number: 1978-2-DE Date Issued: _____

II.A. Applicant Identification:

Operator	Owner
Name: Land and Lakes Company	Name: Stony Island Reclamation
Phone Number: (708) 825-5000	Phone Number: (708) 825-5000

Agency correspondence mailed to: ____ Owner X Operator ____ Other (Explain)

B. Site Ownership:

X Presently Owned by Applicant
____ Presently Owned by Trust
____ Presently Owned by Corporation

____ To be Leased by Applicant for _____ years
____ Years of Lease Remaining: _____
____ Beginning Date of Lease: _____
____ Expiration Date of Lease: _____

Operated by: X Illinois Corporation ____ Partnership ____ Government ____ Individual
____ Trust ____ Other: _____

III. Location Information:

Attach a copy of the United States Geological Survey (USGS) quadrangle map.

Describe the exact area or unit which is being requested to operate: Southern 4 acres of cell VI of Phase II of the 122nd street landfill.

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

IV. Financial Assurance:

Are financial assurance documents included? ____ Yes ____ No __X__ N/A
(Use **Original** Agency Forms).

V. Documentation:

Are all necessary reports and information required in the Developmental permit(s) provided? __X__ Yes ____ No ____ N/A

VI. Certification:

I hereby certify that the facility has been developed in accordance with IEPA Development Permit No. 1978-2-DE and any applicable supplemental permit(s).

Engineers:

Name: Neil D. Williams, PhD., P.E.

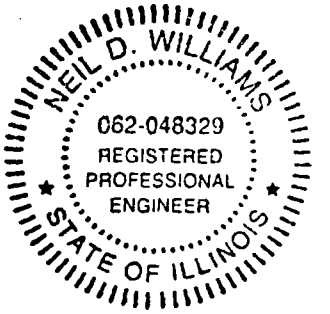
Address: 621 N.W. 53rd Street, ste 650

Boca Raton, FL 33487

Phone No.: (407) 995-0900

Signature: _____

Seal:



EB:tk:5/13/35(12/6/89)

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

CLOSURE PLANS AND POST-CLOSURE CARE PLANS
(LPC-PA11)

Name of Facility: Land and Lakes #3 Site Number: 0 3 1 6 0 0 0 0 3 4

County: Cook

Permit No.: 1978-2-DE for original DE, if obtained.

GENERAL INFORMATION:

1. Facilities included in closure plan (check all that are applicable):

X	Disposal Unit(s)	____	Indefinite Storage Unit(s)
____	Storage/Transfer Unit(s)	____	Composting

Provide a map or plan that clearly delineates each of the above. If more than one (1) unit exists for each category, make sure to clearly designate each individual unit.

2. Was the interim formula of 35 IAC 807.624 previously used to prepare a cost estimate and provide financial assurance? X Yes ____ No

3a. Do the submitted closure plan, post-closure care plan and cost estimates include all facilities that were previously covered by the interim formula? X Yes ____ No

If no, explain in detail why all facilities have not been included.

b. Is this a biennial revision of the closure and post-closure cost estimates as required by 35 IAC 807.623? ____ Yes X No. Provide date of recently approved closure/post-closure plan and permit number. February 10, 1995 - Supplemental Permit #1994-390-SP

If yes, provide details below in any areas which have been revised.

c. Does this modify a previously approved closure plan? X Yes ____ No

If yes, provide details on the revision in the applicable area below.

If the answer to any of the above is yes, provide a copy of the old and new closure and post-closure plan and estimates.

4. Will any of the closed units require post-closure care? X Yes ____ No

If yes, also complete applicable portions of Items 9-16.

COVER INFORMATION: All references are to approved supplemental permit application 1994-390-SP.

5. For disposal unit(s) provide a map which clearly indicates the following areas (final cover is as defined in 807.305(c)): See Figure VI-6 & Part VI Sect 13

A. Those areas (or units) which are documented as having final cover applied. Provide date(s) when final cover completed. September 1990

B. Those areas which are documented as having intermediate cover in place. Provide date(s) when intermediate cover completed. June 1995

C. Any areas currently permitted, or proposed to be permitted, which will require any additional cover.

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

6. For each area described under #5 provide:

		Cert. Closed	Exist. Interm.	Prop Cel
A. The estimated date that cover was/will be applied.		Sept 1990	June 1995	2003
B. The total area (in acres).		18	43	12
C. The average depth of refuse in each area. Provide bottom elevation (MSL) and final elevation (MSL).	Final	625	640	645
	Bottom	535	535	535
	Depth	90	105	110
D. Estimated date of final closure (35 IAC 807.503(c)(6)).		Sept 1990	1994-2003	2003

The following must accompany the application. In the space provided, identify the page number or location in the supporting documentation where this information can be found.

CLOSURE
(Refer to 35 IAC 807.502 and 807.503)

Information Location		
Part VI [1]	7.	For disposal and/or indefinite storage units, provide a closure plan which addresses or provides the following:
Part VI-Sect 3.4 [1]	A.	The location of the source and type of cover material to be used. Provide information for the quality and quantity to be used.
Part VIII [1]	B.	The design specifications to be used in construction of the cap to include compa depth of each lift, total depth, etc.
Part VIII [1]	C.	The testing and documentation procedures to be used to insure the approved design specifications have been met.
Part VIII [1]	D.	Recordkeeping and certification of test results.
Part VI-Sect 3.3 [1]	E.	The source and type of material to be used for a vegetative layer (on top of the compacted layer).
Part VI-Sect 3.3 [1]	F.	The total depth of the vegetative layer. The depth selected for the vegetative layer must be accompanied by a discussion demonstrating it will be adequate to:
Part VI-Sect 3.2 [1]	1.	Provide moisture for cover species;
Part VI-Sect 3.2 [1]	2.	Prevent root penetration into the cover based on the species of vegetation selected; and
Part VI-Sect 3.2 [1]	3.	Support the planted species without continued maintenance.
Part VI-Sect 8.0 [1]	G.	Any gas control system that will be provided prior to post-closure care. Include monitoring and collection or venting systems.
Part VI-Sect 4.0 [1]	H.	Calculations and cross-sections for the design of the system that will preven run-on and run-off from affecting the closed unit(s) during the post-closure period. Include a map showing the drainage and erosion control system design for control of run-on and run-off.

[1] All References are to approved supplemental permit #1994-390-SP

Information Location

Part VI-Sect 11[1] I. A plan to be followed in case of premature final closure and temporary shutdown of the unit(s). This should identify the specific differences between routine and premature closure.

Part VI-Sect 11[1] J. A description and justification of any waste to be accepted for use in closure or post-closure care.

Part VI-Sect 10[1] K. A schedule of the closure activities to include:

Part VI-Sect 10[1] 1. Placement of final cover;

Part VI-Sect 10[1] 2. Placement of vegetative layer; and

Part VI-Sect 10[1] 3. Seeding, fertilizing and mulching.

Part VI-Sect 9[1] L. A procedure to evaluate all monitoring data collected during the active life. This should be able to demonstrate that facility at closure is not causing nor contributing to violations of the Act or 35 IAC Part 807.

8. For composting or storage/transfer units, provide a closure plan which addresses the following:

--- A. The maximum amount of waste that could be at the facility at the time of closure.

--- B. The plan for removal of the waste material.

--- C. The methods to decontaminate any remaining facilities or equipment.

--- D. A schedule and recordkeeping procedures to be followed.

--- E. A plan to be followed in case of premature final closure and temporary shutdown of the unit(s). This should identify the specific differences between routine and premature closure.

POST-CLOSURE (applicable to disposal and indefinite storage facilities) (Refer to 35 IAC 807.523 and 807.524)

All references are to approved supplemental permit #1994-390-SP.

9. Indicate the number of years post-closure care will be provided. 30*

Part VI-Sect 12[1] 10. Describe the inspection program that will be followed to monitor the site for subsidence, cracks, erosion, establishment of vegetation and gas migration. This should include frequency of inspections, and what procedures will be followed during the inspection. The frequency should be quarterly at a minimum and additional inspections when needed.

*See attachment A to Cell VI operating permit application dated July 6, 1995.

[1] All references are to approved supplemental permit #1994-390-SP.

Information Location	
Part VI-Sect 12	11. Describe the quantitative criteria which will be used to determine what problems discovered during the inspection will require corrective action.
Part VI-Sect 12	12. Describe what corrective actions will be taken to correct each type of problem that is discovered.
Part VI-Sect 12	13. Discuss any proposed changes to the groundwater monitoring program applicable during closure/post-closure.
Part VI-Sect 12	14. Describe what recordkeeping procedures will be used to document site inspections, problems found, corrective actions taken, groundwater monitoring results, leachate monitoring, impact of the site on groundwater, etc.
Part VI-Sect 12	15. Describe the security measures that will be provided to prevent unauthorized entry to the site during the post-closure care period.
Part VI-Sect 12	16. Provide a procedure to evaluate all data collected during the post-closure care period. This should be able to demonstrate that the site will not cause future violations of the Act or 35 IAC 807.

CLOSURE COST ESTIMATES: (Note: Pursuant to 35 IAC 807.621(d) the cost provided below must be based on assumption that the Agency will contract with a third party for implementation of the closure plan and post-closure plan.) (Refer to 35 IAC 807 Subpart F).

Provide a cost estimate of the following elements required under the closure plan. (Note: If closure plan is for more than one unit provide separate cost estimates for each unit.) Each estimate must provide details as to how the estimate was derived.

see footnote[2]	17. For disposal and indefinite storage facilities, provide:
see footnote[2]	A. The costs to obtain, move and place the cover material (this should include an estimate of the total area requiring final cover).
see footnote[2]	B. The cost for inspection and certification of final cover construction details.
see footnote[2]	C. The cost to obtain, move and place the vegetative cover (top soil).
see footnote[2]	D. The cost to monitor for gas and install any gas control system.
see footnote[2]	E. The cost to install the run-on and run-off control system.
see footnote[2]	F. The cost of fertilizing, seeding and mulching the vegetative layer.
see footnote[2]	G. The cost for certification of closure, utilizing the Agency closure certification forms.
see footnote[2]	H. Total cost of the above.

[2] Cell VI Operating Permit Application Attachment A pages 1-3 dated July 6, 1995.

[1] All references are to approved supplemental permit #1994-390-SP.

Information Location		
	18.	For storage/transfer or composting involving indefinite storage units, provide:
--	A.	The cost to dispose of, or complete composting of the waste.
--	B.	The cost to remove all waste and decontaminate the facility.
--	C.	The cost to certify completion of closure activities utilizing closure certification forms.
--	D.	Total cost of the above.
	19.	Post-Closure Cost Estimates:
		For facilities requiring post-closure care, provide:
see footnote[3]	A.	The cost for inspection and recordkeeping for subsidence, cracks, erosion, establishment of vegetation, gas migration and leachate collection monitoring.
see footnote[3]	B.	The estimated frequency and cost of repairing any problems discovered.
see footnote[3]	C.	The cost to monitor the groundwater and leachate (include sample collection and analytical costs). Leachate removal and disposal costs should also be provided, if applicable.
see footnote[3]	D.	The cost to review groundwater data and assess impacts.
see footnote[3]	E.	The cost of recordkeeping for all data.
see footnote[3]	F.	The cost for annual mowing of the site.
see footnote[3]	G.	The cost to maintain a gas control system.
see footnote[3]	H.	The cost to certify the end of post-closure care utilizing the post-closure care certification form.
see footnote[3]	I.	Total cost of the above.
	20.	Based on the cost estimates for closure and, if applicable, post-closure care provided above, attach a new/revised financial assurance document for these costs. **Use ORIGINAL Agency forms.**
---	21.	If providing trust funds, submit a current status report, including any calculations for annual reports.

EB:tk:5/14/4(12/4/89)

[3] Cell VI Operating Permit Application - Attachment A Pages 4-5 dated July 6, 1995

ATTACHMENT A
CELL VI OPERATING PERMIT APPLICATION
JULY 6, 1995

LAND AND LAKES #3 FACILITY

Premature Final Closure Cost Estimate

Total area of landfill at time of premature closure = 55 acres + 18 certified closed

Total area requiring final cover = 55 acres

Total area with intermediate cover = 55 acres of 1 ft (0.3m) of clay

1. Grading and Backfilling

   Grading-Machine and Operator

   32 hrs x $80/hr = $ 2,560

   Miscellaneous Backfill - Excavate, Haul and Place
   (includes removal of concrete and tire stockpile)

   5,000 yd^3 x $1.50 yd^3 = $ 7,500

2. Equipment Decontamination

   Materials and Labor

   10 hrs x $80/hr = $ 800

3. *Cover Placement*

43 acres of the area with intermediate cover must receive 2.0 ft. of compacted clay, 2.5 ft. of final protective cover and 0.5 ft. of topsoil.

The remaining 12 acres of intermediate and daily cover will receive a 40 mil geomembrane, 2.5 ft. of final protective soil and 0.5 ft. of topsoil.

Compacted Clay

Excavate Haul and Compact

43 acres x 2.0 ft x 43,560 ft^2/acre
x yd^3/27 ft^3 x \$2/yd^3 = \$277,500

Synthetic Cap

12 acres of 40 mil geomembrane x \$16,000/acre = \$192,000

Final Protective Cover

Excavate Haul and Compact

55 acres x 2.5 ft x 43,560 ft^2/acre
x yd^3/27 ft^3 x \$1.00/yd^3* = \$221,833

Topsoil

Excavate Haul and Place

55 acres x 0.5 ft x 43,560 ft^2/acre
x yd^3/27 ft^3 x \$1.00/yd^3 = \$ 44,367

Construction Quality Assurance

- 3 ft compacted clay:
  43 acres x \$2,500/acre \$107,500
- 40 mil geomembrane:
  12 acres x \$3,000/acre \$ 36,000
- 3 ft final protective layer:
  55 acres x \$500/acre \$ 27,500 = \$171,000

*Includes using compost and/or sludge as approved final protective cover layer amendments.

ATTACHMENT A
CELL VI OPERATING PERMIT APPLICATION
JULY 6, 1995

4.	Gas Monitoring System		
	Perimeter Monitoring Wells		
	16 clusters x $3,500/cluster	=	$ 56,000
5.	Interior Monitoring Wells		
	4 x $1,300/well	=	$ 5,200
6.	Vegetation		
	Fertilize, Seed and Mulch		
	55 acres x $1,000/acre	=	$ 55,000
7.	Security Measures	=	$ 500
8.	Certification of Closure	=	$ 20,000
	TOTAL		$1,054,253

ATTACHMENT A
CELL VI OPERATING PERMIT APPLICATION
JULY 6, 1995

Post-Closure Care Cost Estimate
Scenario A (15 year period)
Scenario B (30 years at 4% discount)
Scenario C (30 year period)

Total area of closed landfill = 73 acres

1. Inspections

   4/year x $500/inspection = $ 2,000/yr

2. Cover Maintenance

   73 acres x 43,560 ft^2/acre x 0.5%
   x 1 ft x yd^3/27 ft^3 x $2.00/$yd^3$ = $ 1,178/yr

3. Vegetation Maintenance

   73 acres x 1.5% x $1,000/acre = $ 1,095/yr

4. Mowing

   73 acres x $25/acre = $ 1,825/yr

5. Monitoring Gas Monitoring System

   $1,500/yr = $ 1,500/yr

6. Miscellaneous Maintenance

   $1,000/yr = $ 1,000/yr

7. Leachate/Removal Treatment at MWRDGC

1 gal/acre/day x $0.02/gallon	=	$ 533/yr

8. Groundwater Monitoring

22 groundwater and leachate monitoring points

Sample collection, field measurements, preparation, transportation, and documentation reporting

$2,186/point/yr x 22 points	=	$ 48,092/yr

Total Post Closure Cost/Year	=	$ 57,223/yr
x 15 Years (Scenario A)	=	$ 858,340
x 30 Years at 4% Discount (Scenario B)	=	$ 529,287
x 30 Years (Scenario C)	=	$ 1,716,679

Total Closure/Post Closure (Scenerio A/15 year Post Closure)	=	**$ 1,912,593**
Total Closure/Post Closure (Scenerio B/30 year Post Closure with 4% discount)	=	**$ 1,583,540**
Total Closure/Post Closure (Scenerio C/30 year Post Closure with no discount)	=	**$ 2,770,932**

Prepared for

Land and Lakes Co.

123 N. Northwest Highway
P.O. Box 778
Park Ridge, Illinois 60068-0778

FINAL REPORT FOR

CELL VI SOILS AND GEOSYNTHETICS

CONSTRUCTION QUALITY ASSURANCE SERVICES

LAND AND LAKES NO. 3

(122ND STREET LANDFILL)

CHICAGO, ILLINOIS

Prepared by

GeoSyntec Consultants
621 N.W. 53rd Street, Suite 650
Boca Raton, Florida 33487

Project Number FQ2210-10

June 1995

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Terms of Reference

This final report was prepared by GeoSyntec Consultants (GeoSyntec) for Land and Lakes Company, Inc. (LALC) of Park Ridge, Illinois to provide a summary of the construction quality assurance (CQA) monitoring activities conducted by GeoSyntec for the installation of the composite liner system of Cell VI at the LALC No. 3 facility (122nd Street Landfill), in Chicago, Illinois. This final report was prepared in accordance with the document entitled "*Supplemental Permit Application for Proposed Cell VI of Phase II, 122nd Street Landfill, Chicago, Illinois, Part VIII-B: Construction Quality Assurance Plan*" prepared by GeoSyntec, dated June 1994.

The report was prepared by the GeoSyntec CQA Project Manager, Mr. Daniel A. Schauer, P.G., and the CQA Project Engineer, Mr. Harry M. Tomlinson, Jr., P.E. In keeping with the policies of GeoSyntec, the report was reviewed by Dr. Neil D. Williams, P.E., GeoSyntec's Engineer-of-Record, who was in responsible charge of the CQA monitoring activities and report preparation.

1.2 Report Organization

The remainder of this report is organized as follows:

- Section 2 provides a description of the project and identifies project personnel;
- Section 3 presents a description of the tasks performed in the provision of the CQA monitoring services;
- Section 4 provides a description of the field CQA activities performed by GeoSyntec during construction of the composite lining system;

- Section 5 describes the record drawing which illustrates the location of the geomembrane panels, seams, repairs, and sample locations;

- Section 6 presents a summary of the CQA monitoring activities conducted during construction of the composite lining system.

The descriptions and observations presented in Sections 2 through 6 are supported by the CQA documentation presented in the appendices to this report referenced as Appendix A through Appendix J.

2. PROJECT INFORMATION

2.1 Project Description

This project involved construction of the composite lining system for Cell VI located in the eastern central portion of the 122nd Street Landfill. Cell VI is approximately 13 acres (5.2 hectares) in plan area and is trapezoidal in shape, measuring approximately 700 ft (313 m) along its eastern boundary, 500 ft (152 m) along its southern boundary, 900 ft (275 m) along its western boundary, and 950 ft (290 m) along its northern boundary. The phase of work referred to in this final report involved construction of the approximately 4 acre (1.6 hectare) southern portion of Cell VI.

The soils and geosynthetics components used to construct the eastern sideslope of the Cell VI composite liner system included the following, from top to bottom:

- a 1.0-ft (0.3-m) thick granular leachate collection system (LCS) protective layer;
- a DC 4205009 LCS geocomposite drainage layer manufactured by the Tensar Corporation (Tensar) of Morrow, Georgia;
- a 60-mil (1.5-mm) thick textured high density polyethylene (HDPE) geomembrane manufactured by Poly-Flex Inc., (Poly-Flex) of Grand Prairie, Texas; and
- a 3.0-ft (0.9-m) thick compacted clay layer constructed from the clay obtained from the excavation for Cell VI.

The soils and geosynthetic components used to construct the base of the Cell VI composite liner system include the following, from top to bottom:

- a 1.0-ft (0.3-m) thick granular liner protective layer;

- a 7 oz/yd^2 (237 g/cm^2) nonwoven polyester geotextile (Trevira® 1125) manufactured by Hoechst Celanese of Spartanburg, South Carolina;

- a NS 140551 geonet manufactured by Tensar;

- a 10 oz/yd^2 (340 g/cm^2) nonwoven polyester geotextile (Trevira® 1135) manufactured by Hoechst Celanese, which was used as a cushion beneath the stone bedding gravel in the leachate collection sump and surrounding the leachate collection pipes;

- a 60-mil (1.5-mm) thick smooth HDPE geomembrane manufactured by the Serrot Corporation of Henderson, Nevada; and

- a 3.0-ft (0.9-m) thick compacted clay layer constructed from the clay obtained from the excavation for Cell VI.

Construction and CQA monitoring of the composite lining system described above commenced on 27 April 1995 and were completed on 24 June 1995. Photographic documentation of the Cell VI construction activities is presented in Appendix A.

2.2 Geosynthetic Material Quantities

The installed areas of the geosynthetics materials used to construct the composite liner system were determined based on field measurements documented by the GeoSyntec Site CQA Manager. The approximate areas of installed geosynthetic materials were as follows:

- the 60-mil (1.5-mm) thick smooth HDPE geomembrane, geonet, and geotextile areas each measured 98,395 ft^2 (9,141 m^2); and

- the 60-mil (1.5-mm) thick textured geomembrane and geocomposite areas each measured 71,271 ft^2 (6,621 m^2).

2.3 Project Contractors and Personnel

2.3.1 Project Responsibilities

Activities related to the construction of the composite lining system were performed by the owner, designer, contractor, geosynthetics installer, CQA consultant, and surveyor. The specific responsibilities of each party during this project were as follows:

- *Owner* - LALC was responsible for overall project management and all decisions regarding clarification or modification of the construction drawings and project specifications.

- *Design Consultant* - GeoSyntec of Boca Raton, Florida was responsible for preparation of the supplemental permit application which included project specifications, CQA plan, and construction drawings.

- *Earthwork Contractor* - LALC was responsible for the overall construction of Cell VI including earthwork, supervision of related construction activities, and installation of LCS piping, stone bedding gravel, and LCS protective layer.

- *Geosynthetics Installer* - Serrot Corporation (Serrot) of Huntington Beach, California, was responsible for installation of the geomembrane, geonet, geotextile, and geocomposite components of the composite lining system.

- *CQA Consultant* - GeoSyntec of Boca Raton, Florida was responsible for implementation of the CQA Plan, on-site CQA monitoring and final certification of the soil and geosynthetic components used in construction of the composite lining system;

- *Registered Land Surveyor* - LSCI Land Surveyors of Lombard, Illinois, was responsible for verifying the compacted clay liner thickness and providing as-built surveying for LALC during all phases of the Cell VI construction.

2.3.2 Key Project Personnel

The following key project personnel were involved in the installation of the soils and geosynthetics components of the composite lining system.

LALC
(Owner/Operator/Earthwork Contractor)

- Larry Emerson, P.E.
  Director, Engineering
  and Permits
- John Prusko
  Site Engineer

Serrot
(Geosynthetics Installer)

- Bruno Ramirez
  Superintendent
- Onesimo Sanchez
  Master Seamer
- Norberto Bonilla
  Master Seamer
- Constantino Aggurie
  Geomembrane Seamer
- Agustin Milian
  Geomembrane Seamer
- Rodolfo Jimenez
  Geomembrane Seamer
- Roberto Brito
  Geomembrane Seamer
- Dionicio Valle
  Geomembrane Seamer
- Jesus Morales
  Geosynthetics Installer
- Jose Santiago
  Geosynthetics Installer
- Gilberto Ornelas
  Geosynthetics Installer
- Baudelio Andrade
  Geosynthetics Installer

- Luis Hipolito
  Geosynthetics Installer

GeoSyntec
(CQA Consultant)

- Daniel A. Schauer, P.G.
  CQA Project Manager
- David W. Williams
  Site CQA Manager
- Nader Rad, Ph.D., P.E.
  Geotechnical Laboratory Manager
- Bryan Tindell
  Site CQA Manager
- Neil D. Williams, Ph.D., P.E.
  Engineer-of-Record
- Harry M. Tomlinson, Jr., P.E.
  CQA Project Engineer
- Richard Charron
  Geosynthetics Laboratory Manager
- Harriett Lyon
  CQA Monitor

LSCI Inc.
(Land Surveyors)

- Timothy Krisch, PLS
  President

2.3.3 GeoSyntec's On-Site Personnel

The GeoSyntec Site CQA Manager and CQA Monitor monitored the construction of Cell VI between 27 April 1995 and 24 June 1995. The following activities were monitored and documented by GeoSyntec during construction of the Cell VI composite lining system:

- construction of the compacted clay liner;
- installation of the HDPE geomembrane, geonet, geotextile, and geocomposite;
- installation of the HDPE LCS piping;
- installation of the pipe bedding gravel; and
- installation of the liner protective layer.

The GeoSyntec CQA project team included the CQA Project Manager, CQA Project Engineer, Engineer-of-Record, Site CQA Manager, and CQA Monitor. The CQA Project Manager, the CQA Project Engineer, and the Engineer-of-Record were in regular contact with the Site CQA Manager and visited the site during the course of the project. The GeoSyntec on-site CQA personnel thoroughly documented all aspects of the Cell VI construction activities. The on-site CQA personnel's observations are documented in the Photographs in Appendix A and the Daily and Weekly Field Reports presented in Appendix B. The on-site attendance of the GeoSyntec CQA personnel and the Serrot geosynthetic installation crew members is documented on the Personnel Daily Log presented in Appendix C.

3. DESCRIPTION OF THE CQA PROGRAM

3.1 Project Specifications

The scope and requirements of the CQA monitoring program administered by GeoSyntec during construction of the Cell VI composite lining system were determined based on the following documents:

- *"Supplemental Permit Application for Proposed Cell VI of Phase II, 122nd Street Landfill, Chicago, Illinois, Part VIII-A: Construction Specifications"* prepared by GeoSyntec, dated June 1994; and

- *"Supplemental Permit Application for Proposed Cell VI of Phase II, 122nd Street Landfill, Chicago, Illinois, Part VIII-B: Construction Quality Assurance Plan"* prepared by GeoSyntec, dated June 1994.

These documents will hereafter collectively be referred to as the Project Specifications.

Prior to the commencement of CQA activities, the GeoSyntec CQA personnel reviewed the Project Specifications in order to familiarize themselves with the technical requirements of the Cell VI construction.

3.2 Scope of Services

The scope of services performed by GeoSyntec as part of the CQA monitoring program included the following:

- preconstruction evaluation of geosynthetic material (described in Section 3.3);

- preconstruction evaluation of the clay liner materials (described in Section 3.4);

- conformance testing of the geosynthetic materials (described in Section 3.5);
- performance of field CQA activities during installation of the soil and geosynthetic components of the composite lining system (described in Section 3.6); and
- preparation of the final certification report and record drawing (described in Section 3.7).

3.3 Preconstruction Evaluation of Geosynthetic Materials

Prior to delivery of geosynthetic materials, Serrot submitted the manufacturer's information regarding material properties and quality control testing to LALC as set forth in the Project Specifications. The submittal contained the manufacturer's specified properties and quality control protocol for the geosynthetic materials listed in Section 2.1. GeoSyntec reviewed this submittal on behalf of LALC and determined that the proposed materials met the requirements of the Project Specifications and were acceptable for use in the construction of Cell VI.

3.4 Preconstruction Evaluation of Geotechnical Materials

Prior to construction, LALC obtained one composite bulk sample of the clay liner materials which were to be used in the construction of the 3.0-ft (0.9-m) thick compacted clay liner. The composite sample was obtained by LALC on 7 April 1995 from the western base of Cell VI at approximate elevation 535 ft above mean sea level as referenced by the National Geodetic Vertical Datum (NGVD). The composite bulk sample, referenced as CCL-1, was used by GeoSyntec for preconstruction evaluation of the clay liner materials. This sample and three additional composite samples obtained by GeoSyntec, referenced as CCL-2 through CCL-4, were tested in order to evaluate the soil's engineering properties prior to construction.

Preconstruction testing of the clay materials was performed at the GeoSyntec geomechanics laboratory located in Atlanta, Georgia. Results of the preconstruction testing evaluation are presented in Appendix D. These results indicated that the clay to be used in construction of the compacted clay liner met the requirements of the Project Specifications.

3.5 Geosynthetics Conformance Testing

The geosynthetics used in the construction of the Cell VI composite lining system were tested prior to installation to ensure conformance with the requirements of the Project Specifications. The GeoSyntec Materials Testing Laboratory (MTL) located in Boca Raton, Florida, performed the laboratory conformance tests. The geosynthetic conformance tests were conducted in accordance with the testing procedures referenced in the Project Specifications. The GeoSyntec Site CQA Manager was responsible for obtaining, packing, and shipping of the conformance samples to the MTL. In addition, the GeoSyntec Site CQA Manager and CQA Project Manager were responsible for reviewing all conformance test results to assure compliance of the materials with the Project Specifications. Laboratory conformance testing was performed on representative samples of the HDPE geomembranes, geonet, geotextile, and geocomposite materials used for the project. The geosynthetics conformance test results are presented in Appendices F-3, G-3, H-3, and I-3, respectively.

3.6 Field CQA Activities

During construction of the Cell VI composite liner system, GeoSyntec provided full-time on-site CQA monitoring services for the compacted clay liner and geosynthetics installation activities. GeoSyntec's Site CQA Manager performed the following activities during construction:

General

- documented the contractor's on-site activities, equipment, and weather conditions;
- attended construction meetings held on site;
- collected and collated components of the CQA monitoring documentation;
- maintained photographic documentation to record construction progress;

Compacted Clay Liner

The GeoSyntec CQA personnel performed the following activities during the compacted clay liner installation:

- collected samples of the clay liner materials from the on-site stockpile;
- performed preconstruction testing to assure that the clay liner materials conformed with the requirements of the Project Specifications;
- performed field and laboratory testing to determine the moisture content, dry unit weight, and other physical properties of the clay liner material during placement and compaction;
- monitored the lift thickness of the clay liner material during placement and following compaction;
- monitored placement and compaction procedures including equipment used and the number of passes used to compact each lift;
- monitored the adequacy of the successive lift bonding; and

- monitored the desiccation cracking, rutting, and erosion of the surface of the compacted clay liner caused by environmental factors such as heat, rain, and wind.

Geosynthetics Installation

The GeoSyntec CQA personnel performed the following activities during the geosynthetics installation:

- documented delivery of the geosynthetic materials;
- collected geosynthetics conformance samples from on-site stockpiles;
- monitored the installation of the geosynthetic materials and marked repair locations;
- monitored trial geomembrane seaming and production geomembrane seaming operations;
- monitored nondestructive testing of the geomembrane seams;
- selected destructive seam sample locations, and monitored the collection, labeling, and shipment of the destructive samples to the geosynthetics testing laboratory;
- monitored repairs to the geosynthetics including those areas that failed either destructive or nondestructive testing; and
- prepared the geosynthetics CQA documentation and the geomembrane panel layout drawings.

Liner Protective Layer and Pipe Bedding Gravel

The GeoSyntec CQA personnel performed the following activities during the liner protective layer and pipe bedding gravel installation:

- reviewed documentation of quality control results;
- monitored soil for deleterious materials; and
- monitored wrinkles that appeared in the underlying geosynthetics during placement.

3.7 Final Report and Record Drawings

As the final task of the CQA program, GeoSyntec has prepared this final report which contains a detailed narrative describing the CQA activities conducted by GeoSyntec during construction of the Cell VI composite liner system. Documentation of GeoSyntec's CQA activities (presented on the field logs and testing reports) are included as appendices to this final report.

Geomembrane record drawings illustrating the geomembrane panel and seam placements, destructive test locations, and representative cross sections of the composite lining system of Cell VI are presented as Appendix M to this report. For completeness GeoSyntec has included the LSCI as-built drawings showing both subgrade and compacted clay liner elevations which were obtained on a 50 ft (15 m) grid. The record drawings are presented in Appendix M.

4. CQA ACTIVITIES

4.1 Introduction

Section 4 provides a discussion of the field CQA activities performed by GeoSyntec during construction of the Cell VI composite liner system.

4.2 CQA Monitoring of the Compacted Clay Liner Installation

4.2.1 Introduction

GeoSyntec monitored and documented the installation of the 3-ft (0.9-m) thick compacted clay liner to ensure that proper construction techniques and procedures were utilized and to verify that the clay liner material met or exceeded the requirements of the Project Specifications. GeoSyntec's soils CQA monitoring and testing activities were conducted in strict accordance with the Project Specifications. Whenever field or laboratory testing was required, GeoSyntec used the approved American Society for Testing and Materials (ASTM) testing methods. GeoSyntec estimated that approximately 19,360 yd^3 (14,801 m^3) of clay was required to construct compacted clay liner. The clay was obtained by LALC from the on-site borrow source during mass excavation of Cell VI.

4.2.2 Preconstruction Evaluation Testing

GeoSyntec performed preconstruction evaluation testing on representative samples of the clay liner material. The clay liner samples were tested to determine the soil classification, plastic limit, liquid limit, particle size distribution, moisture-density relationship characteristics, and hydraulic conductivity. The permeability tests were conducted on remolded specimens compacted to predetermined moisture and density criteria. The relationship between hydraulic conductivity, moisture, and density was evaluated to determine the required compaction criteria to obtain acceptable values of hydraulic conductivity in the field. Results of the preconstruction testing evaluation are

presented in Table 1 of Geotechnical Laboratory Testing Report provided in Appendix D.

4.2.3 Properties of the Clay Liner Material

The clay liner material obtained from the on-site borrow source is classified as CL - Sandy Lean Clay according to the Unified Soil Classification System (USCS). The clay liner material has a minimum of 50 percent by weight passing the U.S. No. 200 Standard Sieve when tested in accordance with ASTM D 1140, a plasticity index in excess of 4 when tested in accordance with ASTM D 4318. When tested in accordance with ASTM D 5084 under laboratory remold conditions, at moisture content and density values expected to be obtained under field compaction conditions, the measured hydraulic conductivity of the 4 samples tested ranged between 1.1×10^{-8} cm/s (1.1×10^{-10} m/s) and 2.0×10^{-8} cm/s (2.0×10^{-10} m/s).

4.2.4 CQA Monitoring

The clay liner material was excavated from the base of the excavation for Cell VI and placed in stockpiles. Water was sprayed onto the clay during excavation and stockpiling to achieve the required moisture content. The clay liner material was transported by Volvo A-35 dump trucks from the temporary stockpiles within Cell VI to the liner construction area and placed by Caterpillar D6H LGP and D7H bulldozers. The first lift of clay liner material was spread in an approximately 10-in. (250-mm) thick loose lift. The clay was sprayed with water during spreading if additional moisture was needed. LALC used a Caterpillar 825C to compact the clay liner material to an approximate 7-in. (175-mm) thick lift. Prior to installation of successive lifts of clay liner material, the surface of the previous lift was scarified to ensure layer bonding between lifts. This scarification process was observed by GeoSyntec's CQA personnel to achieve acceptable bonding between lifts. The second through sixth lifts of clay liner material were spread to a 9-in. (230-mm) thick loose lift and compacted to an approximate 6-in. (150-mm) thick lift.

Final grading of the compacted clay liner, which was performed by LALC using a CAT D6H LGP bulldozer, typically resulted in a minimum final clay liner thickness of 3.0 ft (0.9 m) prior to installation of the geomembrane liner. The final surface of the clay liner was compacted with a smooth drum roller in order to obtain a smooth surface. GeoSyntec monitored field construction activities to assure that the clay liner was compacted to the approximate range of moisture content and density required to reasonably assure a maximum hydraulic conductivity of 1.0×10^{-7} cm/s (1.0×10^{-9} m/s).

Following completion of the compacted clay liner construction activities, the surface of the clay liner was inspected for desiccation cracking and other unsuitable conditions. As such conditions were observed, the surface of the compacted clay liner was repaired and retested if necessary, under the supervision of the GeoSyntec CQA personnel, prior to placement of the overlying geosynthetics.

4.2.5 Quality Control Testing

GeoSyntec performed quality control (QC) testing for clay liner construction in accordance with the Project Specifications. QC testing included laboratory testing of the clay index properties, in-situ moisture and density testing, and laboratory testing of undisturbed samples from the compacted clay liner.

GeoSyntec collected soil samples during spreading of the clay lifts but prior to compaction for laboratory index testing. These samples were recorded on the Soil Sample Log presented in Appendix E-1. A summary of laboratory index tests performed during construction of the compacted clay liner are presented in Table 2 of the Geotechnical Laboratory Testing Report provided in Appendix D. The tests performed by GeoSyntec included sample moisture content, moisture-density relationship compaction curve (standard Proctor test), grain size distribution curves, Atterberg limits, and soil classification tests.

In accordance with the Project Specifications, GeoSyntec performed nuclear surface moisture-density (ASTM D 3017 and ASTM D 2922) and field sand cone

density tests (ASTM D 1556) during construction of the compacted clay liner. The results of these field tests are presented in Appendices E-2 and E-3, respectively. A total of 51 nuclear surface moisture-density tests and two sand cone tests were performed during construction of the clay liner. The results of these tests are presented in Appendix E.

A total of 12 permeability tests were performed on samples obtained directly from the compacted clay liner using thin walled samplers (Shelby tubes). The final permeability test results indicated that the hydraulic conductivity of the compacted clay liner ranged between 1.3×10^{-8} cm/sec and 1.6×10^{-8} cm/sec. The permeability test results are summarized in Table 3 of Appendix D.

4.3 Geomembrane Installation

4.3.1 Manufacturer's Quality Control Documents

The 60-mil (1.5-mm) thick smooth HDPE geomembrane used during installation was manufactured by Serrot. The 60-mil (1.5-mm) thick textured HDPE geomembrane was manufactured by Poly-Flex Inc. (Poly-Flex) of Grand Prairie, Texas. Serrot provided quality control (QC) certificates demonstrating that the HDPE resin and both the smooth and textured HDPE geomembrane rolls supplied for the project met or exceeded the HDPE material properties presented in the Project Specifications. Copies of geomembrane manufacturer's resin and HDPE geomembrane QC certificates are presented in Appendix F-1.

4.3.2 Conformance Testing

Conformance testing of the HDPE geomembrane used during the construction of Cell VI was conducted by the GeoSyntec MTL. The GeoSyntec CQA personnel obtained conformance samples from the geomembrane rolls delivered to the site. The geomembrane Material Inventory Log is presented in Appendix F-2. The geomembrane conformance samples were taken across the roll width, not including the first revolution

of material on the roll. In general, samples were 3-ft (0.9-m) long by the roll width of 23.6 ft (7 m). The Site CQA Manager marked the roll direction on each sample and attached a label identifying pertinent information such as roll number, lot number, sample number, and sampling date. A total of two smooth and one textured HDPE geomembrane conformance samples were obtained by the GeoSyntec CQA personnel based on the sampling frequency of one sample per 100,000 ft^2 (9,290 m^2) or one per lot whichever resulted in the largest number of samples.

4.3.3 Conformance Testing Comparisons

Upon completion of the geomembrane conformance tests, results were communicated to the GeoSyntec CQA personnel in the field. The test results were reviewed and compared with the material property values requirements identified in the Project Specifications. The GeoSyntec conformance testing results indicated that the HDPE geomembrane supplied for the project met or exceeded the HDPE material properties presented in the Project Specifications. The HDPE geomembrane conformance testing results are presented in Appendix F-3.

4.3.4 Geosynthetics Installation Crew

The Serrot geosynthetic installation crew was comprised of one Superintendent, two Master Seamers, five geomembrane seamers, and five geosynthetic installers. The résumés of the Serrot crew members are presented in Appendix F-4.

4.3.5 Subgrade Acceptance

Prior to the placement of the geomembrane panels, Serrot accepted responsibility for the compacted clay liner surface. This acceptance was received by GeoSyntec in the form of Subgrade Acceptance Form which was signed by Serrot's Superintendent each day of geomembrane panel deployment. Serrot's subgrade acceptance certificates are presented in Appendix F-5.

4.3.6 Geomembrane Placement Methods

Geomembrane panels were deployed by Serrot using equipment which included a front end loader equipped with a spreader bar. The GeoSyntec on-site CQA personnel observed the geomembrane placement operations to ensure that the following problems were avoided or identified:

- damage to the geomembrane due to shipping, storage, or handling;
- scratches or crimps in the geomembrane and damage to the supporting soil caused by deployment techniques;
- manufacturing defects; and
- damage to the geomembrane caused by temporary loading and/or anchoring of the panels with sand bags.

Any damage to the geomembrane or subgrade soil was noted and marked for subsequent repair. Details of the geomembrane panel placement operations were recorded by the GeoSyntec CQA personnel in the Geomembrane Panel Placement Logs presented in Appendix F-6.

4.3.7 Anchor Trench Construction

The anchor trench is located along the Cell VI perimeter. The anchor trench was excavated by LALC in accordance with requirements of the Project Specifications immediately prior to the installation of the HDPE geomembrane. During construction of the lining system, the geomembrane, geonet, and geocomposite were placed in the anchor trench. Upon completion of the geosynthetics installation, the anchor trench was backfilled by LALC.

4.3.8 Monitoring of Geomembrane Seaming Operations

4.3.8.1 Scope

The geomembrane seaming operations conducted by Serrot were monitored by the GeoSyntec on-site CQA personnel. These operations included trial seam testing, production field seaming operations, and non-destructive testing. Prior to field seaming operations, testing of the seaming equipment was required in accordance with the Project Specifications. The procedures followed for this testing are described in Section 4.3.8.2. Serrot used hot wedge (fusion) and extrusion fillet (extrusion) welding methods to construct the geomembrane field seams. General procedures and guidelines followed by Serrot for hot wedge and extrusion welding are described in Sections 4.3.8.3 and 4.3.8.4, respectively. Geomembrane seams were visually examined for proper cleanliness, grinding, overlap, workmanship, and continuity. Non-destructive testing was conducted on all seams to identify defective areas of the seams. These testing methods are described in Section 4.3.9. The seams were also subjected to destructive testing as described in Section 4.3.11. The areas observed or suspected of being substandard were marked by the GeoSyntec CQA and/or Serrot QC personnel for repair. The procedures specified for repairing geomembrane seams are outlined in Section 4.3.11.

4.3.8.2 Geomembrane Trial Seams

Fabrication and field testing of geomembrane trial seams were conducted in accordance with the requirements of the Project Specifications. Serrot's seaming technicians prepared geomembrane trial seams prior to and at least once every four hours during daily production field seaming operations for each seaming unit. The trial seam testing procedures were as follows.

- Four test strips were cut from the trial seam sample; each strip approximately 1 in. (25 mm) wide by 6 in. (152 mm) long.

- The Serrot QC Technician tested two strips in peel and two strips in shear using an electrically powered tensiometer capable of registering the force.

- If any of the strips failed the test, the seaming equipment was checked for proper adjustment, a new trial seam was fabricated, and the test procedure was repeated. If a second trial seam failed, then two additional consecutive trial seams had to achieve successful test results prior to the apparatus or operator performing field seaming. Alternatively, if successful trial seams were not achieved, the welding apparatus and/or the operator was rejected until such time as the deficiencies were corrected and verified and two successful consecutive trial seams were documented.

- Once a trial seam sample passed all tests, the seaming technician and welding apparatus was approved for production seaming operations.

Trial seam testing was performed with a calibrated field tensiometer. A calibration certificate for the field tensiometer is presented in Appendix F-7.

The following criteria for trial seam testing, presented in the Project Specifications, were used by GeoSyntec's CQA personnel to qualify the seaming technicians and equipment for production seaming:

- a minimum peel strength of 65 lb/in. (12 kN/m);
- a minimum shear strength of 120 lb/in. (21 kN/m); and
- occurrence of a film tear bond (FTB) within the geomembrane sheet in all specimens tested.

Trial seam testing of fusion and extrusion welding methods was documented by GeoSyntec in the Trial Seam Logs presented in Appendices F-8 and F-9, respectively. A total of 14 fusion welded trial seam tests were performed by Serrot. All 14 fusion trial seam samples exceeded the requirements of the Project Specifications. A total of 16 extrusion welded trial seam tests were performed by Serrot. All 16 extrusion trial seam samples exceeded the requirements of the Project Specifications. The seaming equipment and seaming technicians were not qualified for use in production seaming

operations by the GeoSyntec CQA personnel until passing trial seam test results, as described above, were obtained.

4.3.8.3 Fusion Seaming Process

The majority of the geomembrane seams were constructed by Serrot with double-track fusion seaming apparatus. The fusion seaming devices used by Serrot produced two seam tracks separated by an air channel throughout the length of the seam. The self propelled fusion welders were equipped with temperature gauges which displayed operating and setting temperatures. Information regarding the production seaming operations which included the initials of the seaming technician, seam location, machine number, machine temperatures, and ambient air temperature was documented by the GeoSyntec CQA personnel in the Geomembrane Seaming Logs presented in Appendix F-10.

GeoSyntec observed the seaming operations to assure that:

- the operator and equipment had obtained passing trial seams;
- the specified seam overlap was maintained;
- the seaming equipment temperatures were maintained;
- the seams were aligned to minimize the number of wrinkles;
- the geomembrane seam area was free of dirt and moisture prior to seaming operations; and
- the electric generators powering the hot wedge welders were carefully placed so as to minimize the risk of damaging the geomembrane.

4.3.8.4 Extrusion Seaming Process

Serrot's extrusion seaming operations were monitored by GeoSyntec. Each of the hand-held extrusion welders used by Serrot was equipped with gauges giving the barrel and/or nozzle temperatures. The temperature gauge(s) were monitored during seaming operations to assure that appropriate operating temperatures were maintained. Information regarding production seaming operations, which included the technician's identification initials of the seaming technician, seam location, machine number, and machine temperatures were documented by GeoSyntec's CQA personnel in the Geomembrane Seaming Logs presented in Appendix F-10.

GeoSyntec observed the seaming operation to assure that:

- the operator and equipment had obtained passing trial seams;
- the extrusion welders were purged prior to beginning a seam until all heat-degraded extrudate was removed from the barrel;
- the specified seam overlap was maintained;
- the extrusion seaming equipment temperatures were maintained;
- the seam area was clean and free of moisture prior to seaming operations;
- the electric generators powering the extrusion welding apparatus were placed and transported such that the geomembrane was protected from damage; and
- grinding of the geomembrane seam area was continuous and completed no more than one hour prior to seaming.

4.3.9 Geomembrane Seam Nondestructive Testing

4.3.9.1 Scope

All geomembrane seams were nondestructively tested by Serrot for continuity using the air pressure test or vacuum test procedure. The air pressure test method was used for seams constructed with fusion welders only. The vacuum test method was used for seams made with extrusion welders. GeoSyntec monitored both the air pressure testing and vacuum testing in accordance with the Project Specifications.

4.3.9.2 Test Methods

Fusion welded seams were nondestructively tested using the air pressure test. The air pressure test utilized the air channel in the seams constructed with the fusion welders. The procedure followed for the air pressure test is described below:

- visually observe the integrity of the air channel in the section of seam being tested;
- seal both ends of the air channel using heat and pressure;
- insert the needle of the pressure gauge into the air channel at one end of the seam;
- inflate the air channel to a pressure of 30 psi (241 kPa) gauge with an air pump;
- monitor the gauge pressure for at least five minutes;
- repair the seam in accordance with Section 4.3.11 of this report if: (i) a loss of pressure exceeded 2 psi (21 kPa); or (ii) the pressure did not stabilize;

- record the beginning and ending times and pressures, along with the location of the test; and

- confirm air flow through the entire channel by releasing the air from the seam at the end opposite of the gauge.

The vacuum test was used to nondestructively test extruded seams. The procedure followed for the vacuum test is described below:

- connect the hose and vacuum box assembly to the vacuum pump;

- wet a strip of geomembrane seam approximately 12 in. by 36 in. (300 mm by 900 mm) with a biodegradable soapy solution;

- place the box over the wetted area;

- close the bleed valve and open the vacuum valve;

- exert pressure on the vacuum box until a seal is obtained between the box and the geomembrane;

- through the viewing window, visually examine the geomembrane seam for approximately 10 seconds for the presence of leaks indicated by the formation of bubbles;

- record the location of leaks, if any;

- close the vacuum valve and open the bleed valve; and

- remove the box and continue the process, overlapping the previous tested portion of seam by a minimum of 2 in. (50 mm).

4.3.9.3 Test Results

Typically, repairs to the geomembrane liner were performed by Serrot using the extrusion welding process and were nondestructively tested using the vacuum test method. GeoSyntec observed these procedures giving special attention to critical locations. The results of the air pressure tests are documented in the GeoSyntec Air Pressure Test Logs presented in Appendix F-11. The results of nondestructive vacuum tests are documented in the GeoSyntec Repair Summary Logs presented in Appendix F-12.

4.3.10 Destructive Geomembrane Seam Testing

4.3.10.1 Scope

Geomembrane seams were subjected to destructive testing for seam strength in accordance with the requirements of the Project Specifications. The destructive testing process included sample location selection, sample collection, field testing, and laboratory testing of the samples.

4.3.10.2 Sample Locations

The combined length of all geomembrane production seams measured by the GeoSyntec Site CQA Manager was 8,048 ft (2,453 m). This overall seam length measurement is based on the information in the Seam and Panel Repair Location Logs presented in Appendix F-13. GeoSyntec selected a total of 19 original destructive sample locations on the geomembrane seams. This corresponds to an approximate frequency of one destructive sample per 424 ft (129 m) of seam and complies with the required minimum frequency of one destructive sample per 500 ft (152 m) of seam length specified in the Project Specifications. Results of the destructive sample field testing activities were documented by GeoSyntec's CQA personnel in the Field Destructive Test Logs presented in Appendix F-14. The destructive sample locations are presented on the Geomembrane Record Drawing in Appendix M.

4.3.10.3 Field Testing Procedure

At the destructive test locations selected by GeoSyntec, samples measuring approximately 1.0-ft (0.3-m) wide by 3.5-ft (1.2-m) long (along the seam) were removed for testing. The field testing procedure is described below.

- Two field test strips were cut from each end of the sample. Of these four test strips, two were tested in peel and two in shear using a gauged tensiometer. The passing criterion was that all four specimens must exhibit FTB and achieve the minimum strength value listed in Section 4.3.8.2.

- If a sample failed the field testing procedure, additional samples were removed for testing from locations a minimum of 10 ft (3 m) from both sides of the failed sample. The process of sample selection and testing was repeated in both directions along the seam away from the failed sample location until passing samples were located, or until the end of the seam made by the welding apparatus was reached, thus isolating the problem area of the seam. The faulty section of the seam was then repaired as described in Section 4.3.11.

- Each 48-in. long test sample was divided and distributed as follows:

  - 12 in. (305 mm) for LALC;
  - 12 in. (305 mm) for Serrot; and
  - 18 in. (457 mm) for GeoSyntec.

4.3.10.4 Laboratory Testing Procedure

The off-site laboratory testing was performed by the GeoSyntec MTL in accordance with the requirements of the Project Specifications. From the 18-in. (457-mm) long laboratory testing portion of the sample, ten destructive test specimens, each 1 in. (25 mm) wide, were removed using a die press. On a gauged tensiometer, five

specimens were tested in peel for adhesion and five were tested for shear strength. A total of 19 original and 4 isolation geomembrane seam samples were submitted to the GeoSyntec MTL for destructive testing. The destructive tests were used to verify that the geomembrane seams complied with the requirements of the Project Specifications. When seams were identified as being substandard, Serrot implemented corrective actions as described in Section 4.3.11, which were completed in the field. The geomembrane seam peel and shear test results are provided in Appendix F-15.

4.3.11 Repairs

The geomembrane panels and seams were visually examined by the GeoSyntec CQA personnel for signs of damage or manufacturing defects (i.e., blisters, punctures, undispersed raw materials, etc.). If any such areas of the geomembrane were discovered, the GeoSyntec CQA personnel would mark the area for repair and subsequent nondestructive testing. Each geomembrane panel or seam repair location was sequentially numbered and recorded by the CQA personnel. The geomembrane panel and seam repair locations are documented in GeoSyntec's Repair Summary Logs presented in Appendix F-12.

4.3.11.1 Patching

Patching was used by Serrot to repair damaged areas of the geomembrane panels and seams. Holes observed in the geomembrane panels or seams during installation were marked by GeoSyntec and later patched by Serrot. Patches were constructed of similar HDPE geomembrane materials to those used during installation. The patched geomembrane areas were generally observed to be free of dirt, moisture, debris, and markings. Serrot constructed the patches by: (i) heat tacking a correctly sized piece of HDPE geomembrane over the repair area; (ii) carefully abrading the perimeter of the patch and the surrounding geomembrane surface along the defective panel or seam area; and (iii) applying an extrusion weld along the full circumference of the patch. Patches extended a minimum of 6 in. (152 mm) beyond the limits of the damaged area. The patches were nondestructively tested by Serrot using the vacuum box test

procedure. The results of nondestructive tests conducted for all geomembrane panel and seam repairs are presented in the Repair Summary Logs in Appendix F-12.

4.3.11.2 Capping

Capping was used to repair relatively long areas of failed field seams. Caps extended a minimum of 6 in. (152 mm) beyond the limits of the defective seam area and were constructed with the same sequence of procedures as described for patches in Section 4.3.11.1.

4.3.11.3 Grinding and Welding

Grinding and extrusion welding were used to repair small sections of deficient extrusion seams, small surface blemishes, and localized flaws which did not penetrate the entire thickness of the geomembrane.

4.4 Geonet Installation

4.4.1 Manufacturer's Quality Control Documents

Serrot used a Tensar NS140551 geonet for construction of the Cell VI leachate drainage layer. Tensar provided manufacturing QC data which indicated that the physical properties of the geonet materials supplied for the Cell VI project met or exceeded the requirements of the Project Specifications. Tensar's manufacturing QC documents are presented in Appendix G-1.

4.4.2 Conformance Testing

Conformance testing of the HDPE geonet used during construction of Cell VI was conducted by the GeoSyntec MTL. The GeoSyntec CQA personnel obtained

conformance samples from the geonet rolls delivered to the site. Samples were taken across the roll width, not including the first revolution of material on the roll. In general, samples were 3-ft (0.9-m) long by the roll width of 6 ft (1.8 m). The GeoSyntec CQA personnel documented each sample and attached a label identifying pertinent information such as roll number, lot number, sample number, and sampling date.

Samples of geonet were taken corresponding to an approximate frequency of one sample for every 100,000 ft^2 (9,290 m^2) of material shipped to the site. A total of 117,600 ft^2 (10,925 m^2) of geonet was delivered to the site. A total of two geonet conformance samples were obtained by GeoSyntec. Conformance samples were shipped to the MTL for testing. GeoSyntec documented Tensar roll numbers and CQA conformance sample numbers for the geonet delivered to the site on the Material Inventory Logs presented in Appendix G-2.

4.4.3 Conformance Testing Comparisons

GeoSyntec reviewed the geonet conformance testing results and compared the results to the material requirements identified in the Project Specifications. The results indicated that the geonet conformance samples tested by GeoSyntec met or exceeded the requirements of the Project Specifications. The geonet conformance testing results are presented in Appendix G-3.

4.4.4 Monitoring of Geonet Installation

4.4.4.1 Geonet Panels

The geonet panels were generally observed to be free of entrapped debris, manufacturing defects, or evidence of damage upon delivery. Damaged areas of geonet observed during installation were repaired in accordance with Section 4.4.5.

4.4.4.2 Geonet Joining Operations

The joining of adjacent geonet panels after deployment by Serrot was observed by the CQA personnel to confirm that:

- the geomembrane surface was free of dirt or debris which may clog the geonet;
- adjacent geonet sheets were overlapped approximately 4 in. (102 mm);
- the geonet sheets were secured to one another with plastic cable ties; and
- the plastic cable ties were installed at 5-ft (1.5-m) intervals along the length of the deployed material;
- plastic cable ties were installed at 6-in. (152-mm) intervals for end-to-end seams; and
- plastic cable ties were installed at 2-ft (0.6-m) intervals along the slopes of the divider berm and perimeter berms.

Serrot's geonet installation practices were observed by the GeoSyntec on-site CQA personnel to be consistent with sound workmanship and generally accepted industry practices.

4.4.5 Geonet Repairs

Holes, tears, or damage to the geonet were repaired by placing a patch over the defect. The patch extended a minimum of 1 ft (0.3 m) beyond the edge of the defect. The patch was secured with ties spaced at 6 in. (152 mm) intervals.

4.5 Geotextile Installation

4.5.1 Manufacturer's Quality Control Documents

Two types of nonwoven geotextile were supplied for the project by Serrot. A 7 oz/yd^2 (240 g/cm^2) nonwoven polyester geotextile (Trevira® 1125) was installed as the specified filter layer on the base of the cell. A 10 oz/yd^2 (340 g/cm^2) nonwoven polyester geotextile (Trevira® 1135) was installed as the cushion layer beneath the geonet and pipe bedding gravel in the leachate collection trenches. In addition to its use on the base of the cell, the Trevira® 1125 geotextile was used as the upper and lower geotextile component of the geocomposite.

The geotextiles supplied by Serrot for Cell VI were manufactured by Hoechst-Celanese. The manufacturer provided certificates demonstrating that the material properties of the geotextiles supplied for the Cell VI composite lining system met or exceeded the minimum requirements of the Project Specifications. The manufacturers' QC documents are presented in Appendix H-1.

4.5.2 Conformance Testing

Conformance testing of the geotextiles was required by the Project Specifications. The GeoSyntec Site CQA Manager obtained conformance samples directly from the geotextile rolls delivered to the site. Samples were taken across the roll width, not including the first 3.0 ft (0.9 m) of material on the roll. In general, samples were 3 ft (0.9 m) long by the roll width. The Site CQA Manager marked the roll direction on each sample and attached a label identifying pertinent information such as roll number, lot number, sample number, and sampling date.

Conformance samples were obtained based on the frequencies specified in the Project Specifications. A total of four conformance samples were obtained and shipped to the GeoSyntec MTL for testing. Three representative samples were tested from the 7 oz/yd^2 (240 g/m^2) geotextile and one sample was tested from the 10 oz/yd^2 (340 g/cm^2) geotextile rolls delivered to the site. Samples of geotextile were taken

corresponding to an approximate sampling frequency of one sample for every 42,625 ft^2 (3,960 m^2) which exceeded the Project Specification minimum specified frequency of one sample per 100,000 ft^2 (9,300 m^2) of material. Conformance samples were shipped to the GeoSyntec MTL for testing. GeoSyntec documented the manufacturers' roll numbers and CQA conformance sample numbers for the geotextile delivered to the site on the Material Inventory Log presented in Appendix H-2.

4.5.3 Conformance Testing Comparisons

GeoSyntec reviewed the geotextile conformance testing results and compared the results to the material requirements identified in the Project Specifications. The testing results indicated that all four geotextile conformance samples complied with the Project Specifications. The geotextile conformance testing results are presented in Appendix H-3.

4.5.4 Monitoring of Geotextile Installation

4.5.4.1 Geotextile Panels

The geotextile rolls were individually wrapped in plastic. This protected the rolls from potential damage due to environmental conditions. The geotextile panels were generally observed to be free of manufacturing defects, dirt, dust, and punctures prior to installation.

Damaged areas of the geotextile were either discarded or repaired. GeoSyntec observed all repair locations either during or after the repair procedures. Whenever possible, the cause of the damage was ascertained and addressed. Serrot then acted to minimize the potential for further damage.

4.5.4.2 Geotextile Joining Operations

The adjacent geotextile panels were overlapped a minimum of 6 in. (150 mm) prior to seaming. The geotextile panels were joined by sewing. The GeoSyntec CQA personnel visually monitored the geotextile seaming operations. Any poorly constructed seams or identified damage was repaired by Serrot. GeoSyntec observed Serrot's geotextile installation practices to be consistent with sound workmanship and generally accepted industry practices.

4.5.5 Geotextile Repairs

No geotextile repairs were required.

4.6 Geocomposite Installation

4.6.1 Manufacturer's Quality Control Documents

The geocomposite installed for Cell VI was produced by Tensar. The geonet component was manufactured by Tensar and the upper and lower geotextiles were manufactured by Hoechst-Celanese. The manufacturers provided certificates demonstrating that the material properties of the geonet and geotextile materials supplied to produce the geocomposite material met or exceeded the minimum requirements of the Project Specifications. The geocomposite manufacturers' QC documents are presented in Appendix I-1.

4.6.2 Conformance Testing

The Project Specifications provided requirements for the geotextile and geonet components of the geocomposite and requirements for ply adhesion and transmissivity of the composite material.

Conformance testing was performed on the geocomposite material after the geonet and geotextile materials were bonded. Samples of unbonded geotextile large enough for testing could not be obtained; however, samples of the same geotextile product (i.e. Trevira® 1125) were obtained from the geotextile rolls delivered to the site: the overall sampling frequency for the Trevira® 1125 geotextile, including the upper layer of geotextile on the geocomposite, exceeded 1 per 100,000 ft^2 (9,300 m^2). The geotextile conformance testing was discussed in Sections 4.5.2 and 4.5.3. GeoSyntec selected and obtained conformance samples from the geocomposite rolls delivered to the site. Samples were taken across the roll width, not including the first revolution of material on the roll. In general, samples were 3 ft (0.9 m) long by the roll width. The Site CQA Manager marked the roll direction on each sample and attached a label identifying pertinent information such as roll number, lot number, sample number, and sampling date.

Samples of geocomposite for conformance testing were taken corresponding to an approximate sampling frequency of one sample for every 100,000 ft^2 (9,300 m^2) or batch. Conformance samples were shipped to the GeoSyntec MTL for testing. GeoSyntec documented the manufacturers' roll numbers and CQA conformance sample numbers for the geomembrane delivered to the site on the Material Inventory Log, presented in Appendix I-2.

4.6.3 Conformance Testing Comparisons

GeoSyntec reviewed the geocomposite conformance testing results. The testing results indicated that all of the geocomposite samples complied with the Project Specifications. The laboratory test results for geocomposite conformance testing is presented in Appendix I-3.

4.6.4 Monitoring of Geocomposite Installation

4.6.4.1 Geocomposite Panels

The geocomposite panels were generally observed to be free of entrapped debris, manufacturing defects, or evidence of damage occurring during shipping, storage, and handling prior to installation. Damaged areas of geocomposite observed during installation were repaired in accordance with Section 4.6.5.

4.6.4.2 Geocomposite Joining Operations

The joining of adjacent geocomposite panels after deployment by Serrot was observed by the CQA personnel to confirm that:

- the bottom geotextile sheets were overlapped;
- adjacent geonet sheets were overlapped a minimum of 4 in. (100 mm) and secured to one another with plastic cable ties; and
- the upper geotextile sheets were overlapped a minimum of 6 in. (150 mm) and continuously sewn.

Serrot's geocomposite installation practices were observed by the GeoSyntec on-site CQA personnel to be consistent with sound workmanship and generally accepted industry practices.

4.6.5 Geocomposite Repairs

The geocomposite repair procedures consisted of placing a patch extending 2 ft (0.6 m) beyond the edges of the hole or tear. The patch was secured by tying fasteners through the bottom geotextile and the geonet of the patch, and through the top geotextile and geonet of the in-place damaged material. The patch was secured every

6 in. (150 mm) with approved plastic cable ties. An additional geotextile component was placed over the patch and was heat sealed to the top geotextile of the in-place geocomposite needing repair.

4.7 HDPE Pipe Installation

4.7.1 Manufacturer's Quality Control Documents

The 18-in. (940-mm) diameter slope riser pipe and 6-in. (150-mm) diameter HDPE leachate collection pipes installed for Cell VI were manufactured by Phillips Driscopipe Inc., of Richardson, Texas. The butt-fusion welding of the HDPE pipe sections was performed on site by LALC. The manufacturer provided certificates demonstrating that the material properties of the HDPE pipe supplied for the Cell VI composite lining system met or exceeded the Project Specifications. In addition, the welder provided certification from the pipe manufacturer stating that the welder was trained by the manufacturer to weld the HDPE pipe. The manufacturer's HDPE pipe specifications are presented in Appendix J.

4.7.2 Monitoring of HDPE Pipe Installation

The HDPE pipe was installed by LALC. The GeoSyntec on-site CQA personnel observed the installation operations for the following:

- the HDPE pipes were clean prior to installation;
- the HDPE pipe perforations were properly oriented;
- the HDPE pipe was properly bedded; and
- the welding contractor performed the fusion welding procedures in accordance with the pipe manufacturer recommendations.

4.8 Liner Protective Layer Installation

4.8.1 Preconstruction Testing

The material supplier provided a particle-size analysis for the liner protective layer material used on the Cell VI project. The soil sampling logs for the liner protective layer are presented in Appendix K-1. The results of the particle-size analysis are presented in Appendix K-2.

4.8.2 QC Testing

GeoSyntec's GEL performed sieve analyses on samples of the liner protective layer at a frequency of one sample per 1,000 yd^3 (760 m^3) and carbonate content tests were performed at a frequency of one test per 5,000 yd^2 (3,820 m^2). The GeoSyntec on-site CQA personnel documented the sampling of the liner protective layer on the Soil Sample Logs presented in Appendix K-1. A summary of the tests performed and the corresponding test results are presented in Table 4 of the Geotechnical Laboratory Testing Report provided in Appendix D.

The QC test results indicated that the sand deviated slightly from the requirements of the Project Specifications. At the request of LALC, the GeoSyntec design engineers evaluated the acceptability of the sand based on the actual test results and determined that it was acceptable for use. GeoSyntec prepared a letter documenting this determination. This letter is presented in Appendix K-3.

4.8.3 Placement Operations

The Project Specifications required that a permeable soil be used as the liner protective layer. LALC installed a material that was free of metal, roots, trees, stumps, concrete, construction debris, or any other organic matter or deleterious material. LALC placed and compacted the material in such a manner as to achieve a

hydraulic conductivity equal to or greater than the permeability specified. The liner protective layer was placed and graded in such a manner as to promote drainage and prevent ponding.

GeoSyntec monitored the placement operations for the following:

- the proper separation was maintained between the geosynthetics and construction equipment; and
- the construction methods used minimized wrinkles in the geosynthetics.

4.9 Pipe Bedding Gravel Installation

4.9.1 Pipe Bedding Gravel Specifications

The pipe bedding gravel used for Cell VI was supplied by Gillen Quarry of Waterloo, Wisconsin. The material property specifications for the pipe bedding gravel were provided in the Project Specifications. According to the Project Specifications, pipe bedding gravel was required to meet the grading requirements for Illinois Department of Transportation Coarse Aggregate CA-11.

4.9.2 Preconstruction Testing

In accordance with the Project Specifications, Gillen Quarry submitted the following information regarding the pipe bedding gravel:

- the proposed material source;
- the results of a particle size analysis on the proposed material conducted in accordance with ASTM C 136; and

- the results of a calcium carbonate test conducted in accordance with ASTM D 3042.

The test results are presented in Appendix L-1.

4.9.3 QC Testing

Gillen Quarry submitted results of a particle size analysis which was performed on a representative sample of the material used on the Cell VI project. The results of the particle size analysis are presented in Appendix L-2.

4.9.4 Placement Operations

The pipe bedding gravel was placed within the leachate collection trenches by LALC. GeoSyntec monitored the placement operations for the following:

- proper installation of the underlying Trevira® 1135 cushion geotextile and Tensar geonet in the collection trench;

- proper separation was maintained between the geosynthetics and construction equipment used to place the pipe bedding gravel;

- placement methods did not damage the underlying geonet, geotextile cushion, or geomembrane; and

- Trevira® 1125 filter geotextile was properly overlapped and continuously sewn following placement of the pipe bedding gravel.

5. RECORD DRAWINGS

GeoSyntec prepared record drawings of the installed geomembrane liner. The record drawings show the locations of geomembrane panels, seams, destructive sample locations, and representative cross sections of the composite liner system. The GeoSyntec geomembrane record drawings are provided in Appendix M. The composite lining system as-built drawings produced by LSCI are also presented in Appendix M.

6. SUMMARY

The primary responsibilities for the installation of the composite lining system components for Cell VI at the of LALC No. 3 facility were divided between LALC, Serrot, and GeoSyntec. LALC was responsible for all decisions regarding any variances from the requirements of the Project Specifications, or other issues regarding installation of compacted clay liner and the geosynthetics which were raised during the course of the project. GeoSyntec was responsible for the design of the project. LALC was responsible for the earthwork including construction preparation of the compacted clay liner. Serrot was responsible for installing the geomembrane and geonet. LSCI Land Surveyors was responsible for the as-built survey of the final subbase elevations, the final compacted clay liner elevations, and the certification of the compacted clay liner thickness. GeoSyntec was responsible for the CQA monitoring during installation of the compacted clay liner, geomembrane, and leachate collection system components, and conducting the required laboratory tests for the clay liner, geomembrane, and leachate collection system components.

Based on GeoSyntec's understanding of the Project Specifications, the results of testing conducted as part of the CQA monitoring activities, and the documented observations of GeoSyntec's on-site CQA personnel, installation of the clay liner materials and geosynthetic components of the composite lining system for Cell VI at the 122nd Street Landfill is considered to have been conducted in general accordance with the Project Specifications.

Daniel A. Schauer, P.G.
CQA Project Manager

Neil D. Williams, Ph.D., P.E.
Engineer-of-Record
Illinois P.E. No. 062-048329

NEIL D. WILLIAMS 062-048329 REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

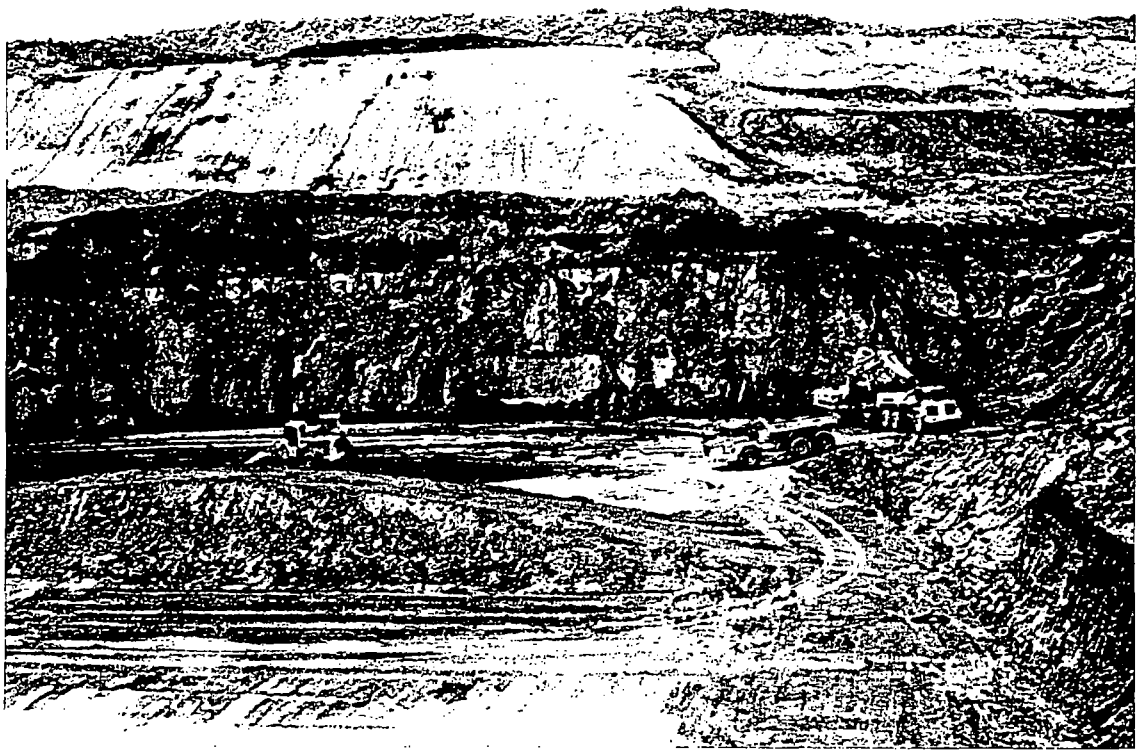
CQA PHOTOGRAPHIC DOCUMENTATION

FOR

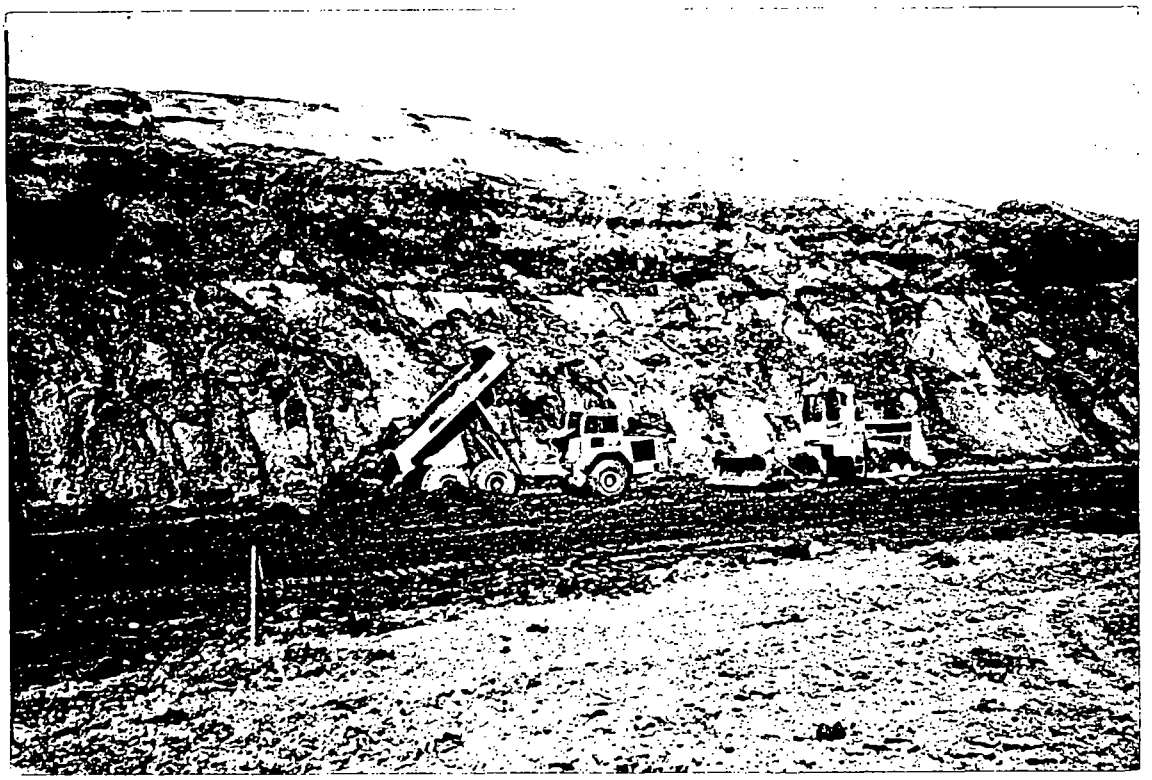
LAND AND LAKES NO. 3

CELL VI

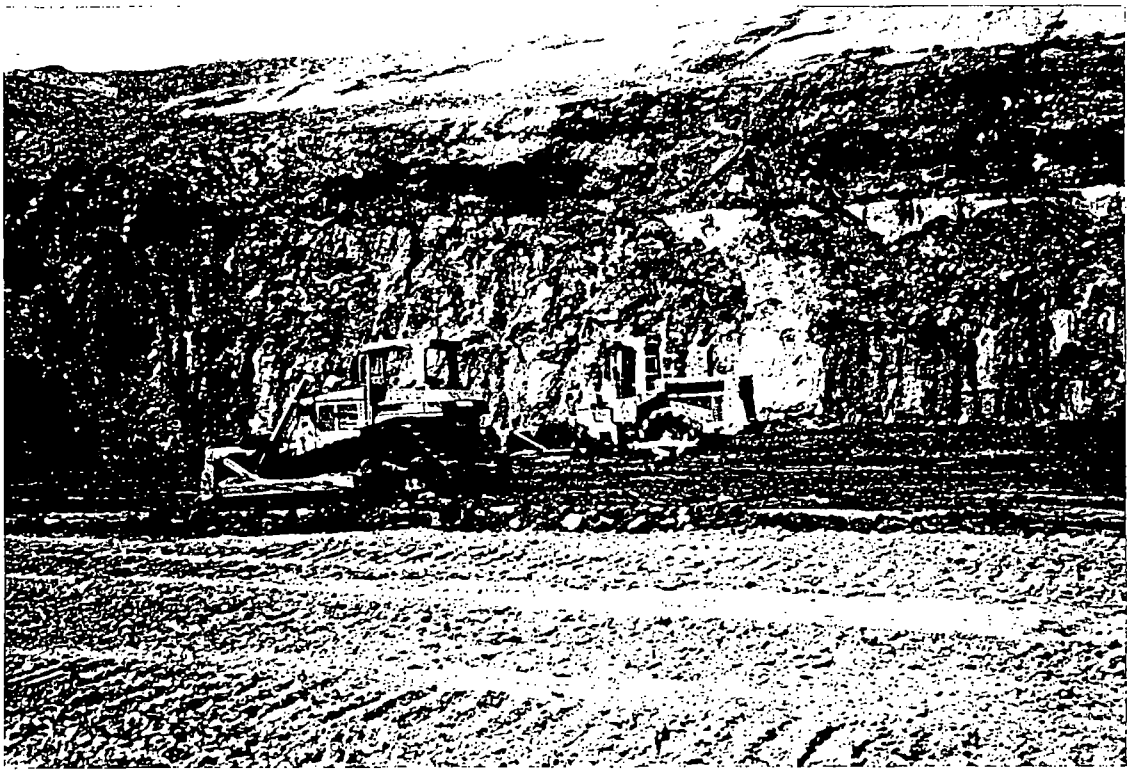
COMPOSITE LINER SYSTEM



View of the northwest portion of Cell VI. Note the clay stockpile located on the floor of the cell.

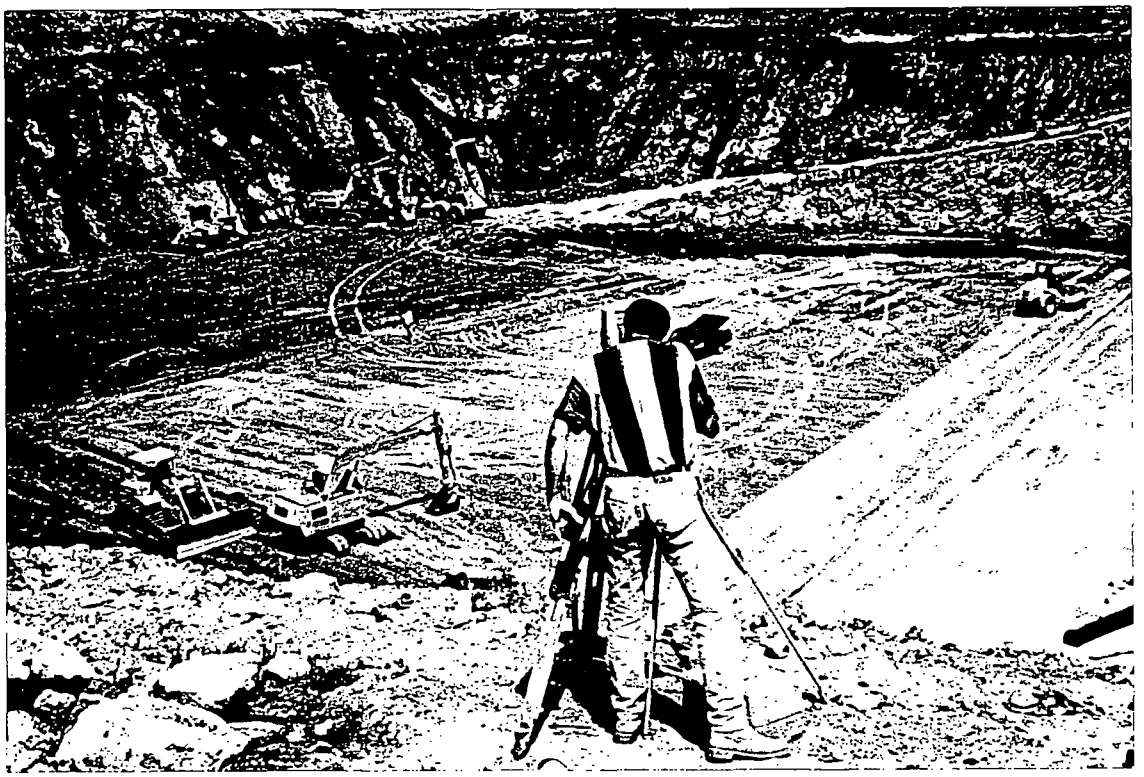


View of Cell VI during the clay liner placement and compaction operations. Dump trucks were used to transport the clay materials from the on-site stockpile to Cell VI.

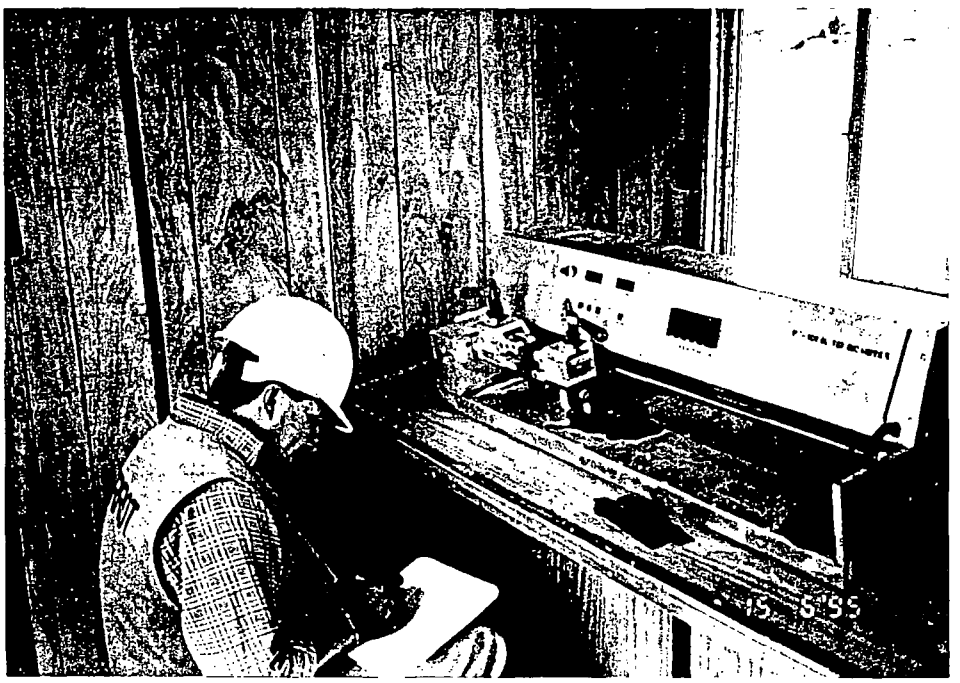


View of the base of Cell VI looking west during compaction of the clay liner. LALC used a Caterpillar 825C tamping foot compactor to knead and compact each lift of the clay liner.

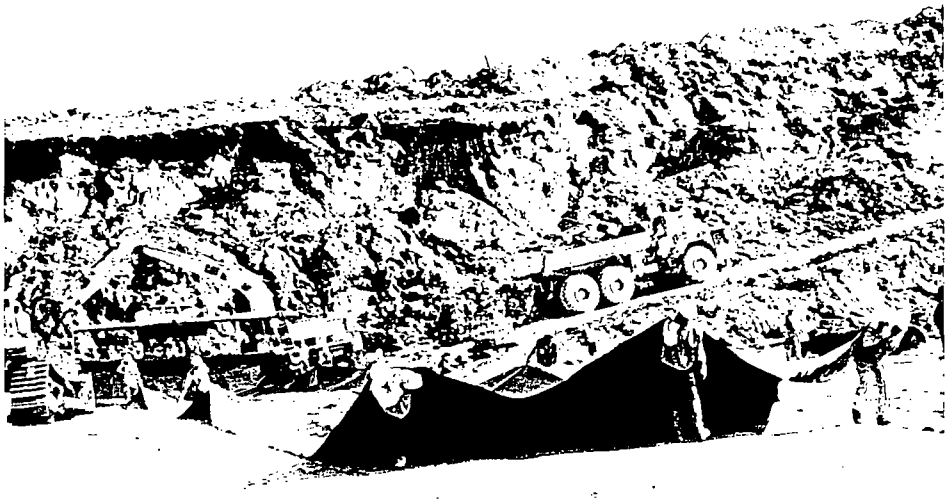
In accordance with the Project Specification, GeoSyntec CQA personnel performed geotechnical field tests including nuclear surface moisture-density and sand cone tests during the clay liner installation activities.



Upon completing compaction of the final lift of the clay liner, LALC rolled the clay liner surface with a smooth drum vibratory roller and the LSCI survey crew recorded the finish grade elevation (right center of photo).

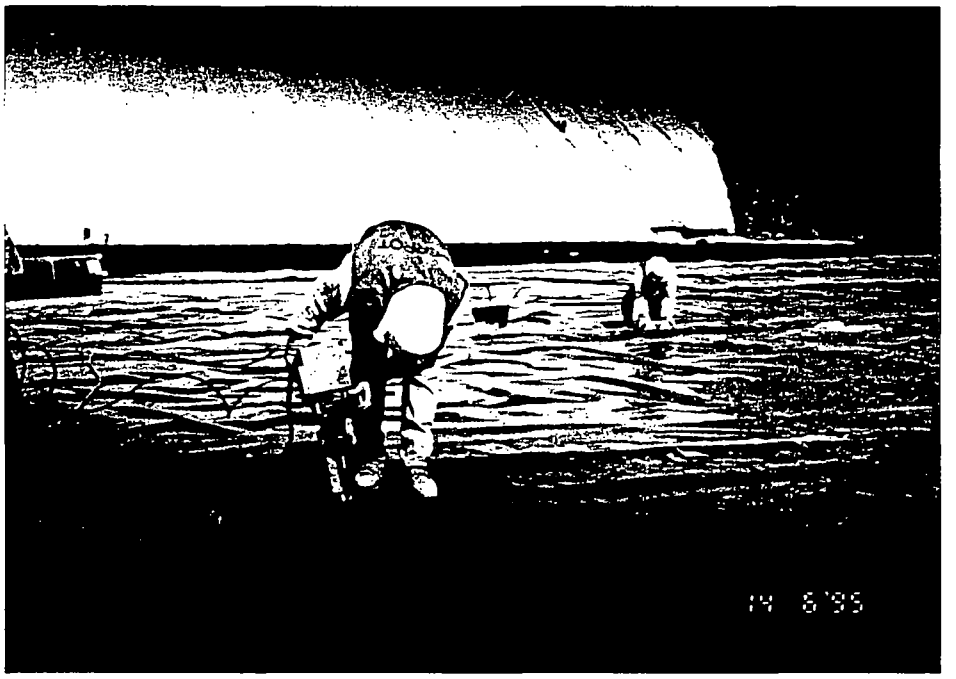


Prior to each field seaming period, Serrot's seaming technicians were required to successfully complete a trial seam test. From each trial seam sample, four test specimens were removed and field tested on a calibrated tensiometer by the Serrot quality control technician as shown above.

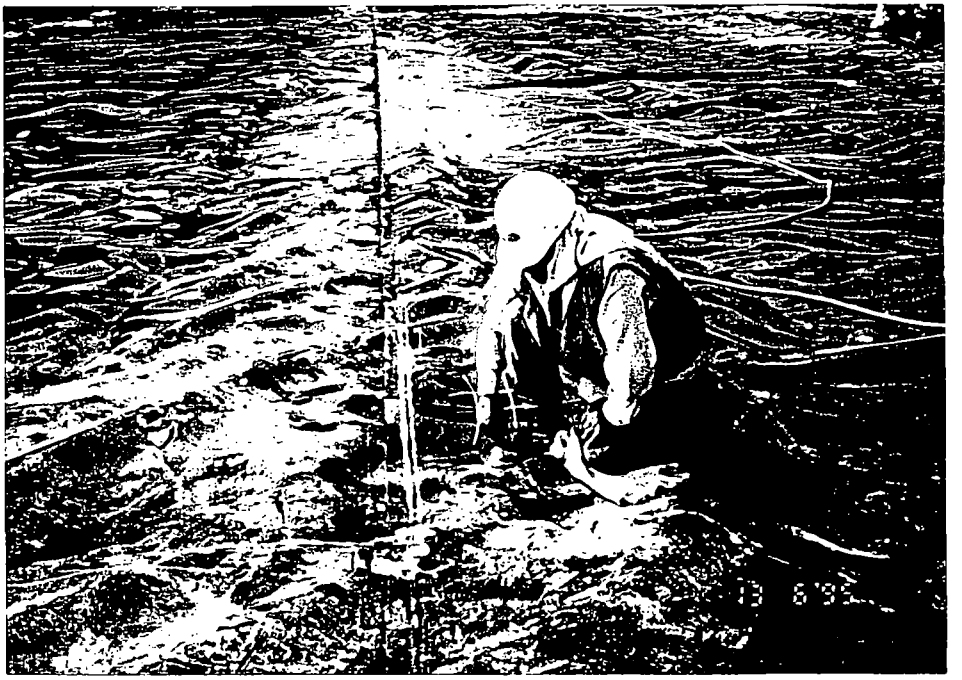


Serrot deployed individual geomembrane rolls using a spreader bar mounted on a front-end loader.

GeoSyntec's CQA personnel observed and documented Serrot's production field seaming operations. View of the double-track fusion seaming process.



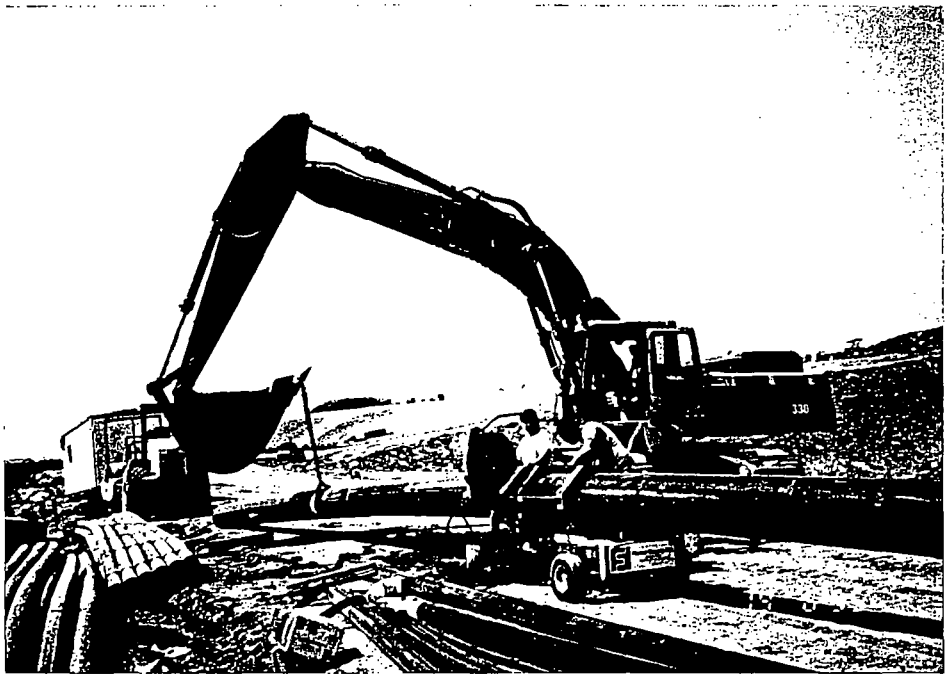
View of the Serrot seaming technician during the extrusion welding process which was used to complete the HDPE geomembrane repairs.



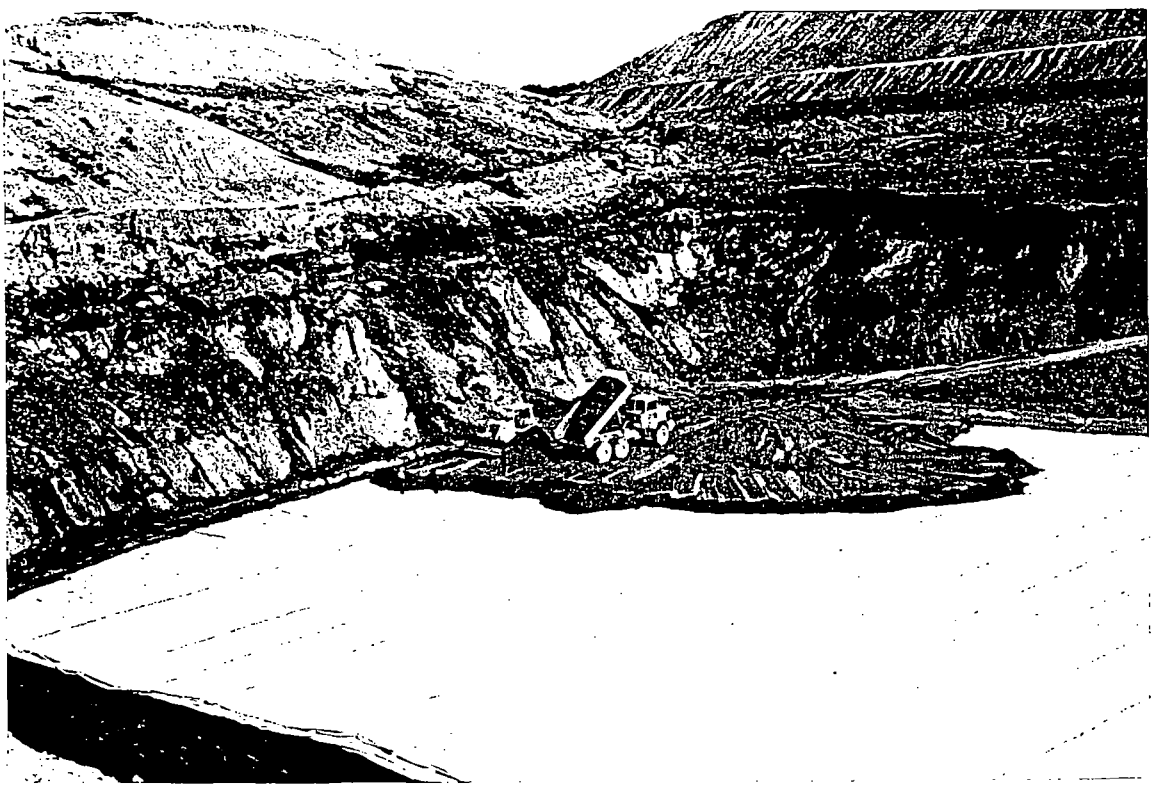
View of the Serrot seaming technician during the nondestructive air pressure testing of double-track fusion seams.

View of Serrot's vacuum box procedure used for nondestructive testing of extrusion seams.

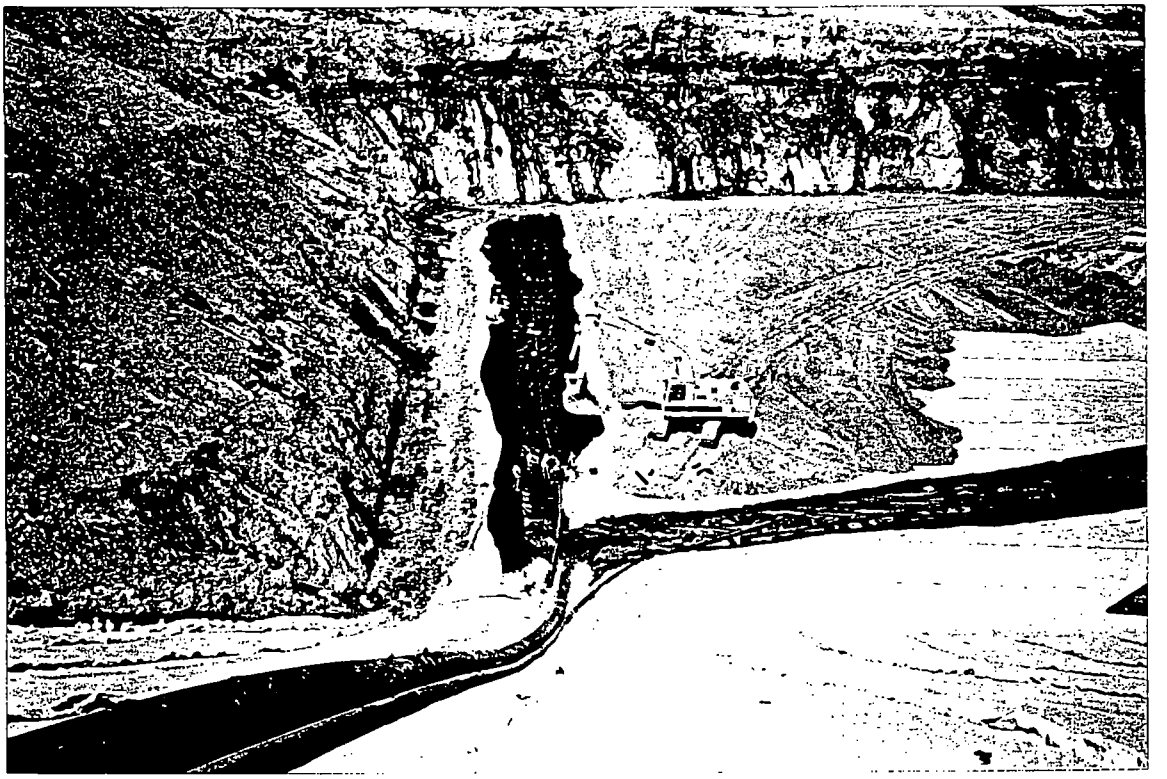
GeoSyntec's CQA personnel monitored installation of the geonet, geotextile, and geocomposite (above).



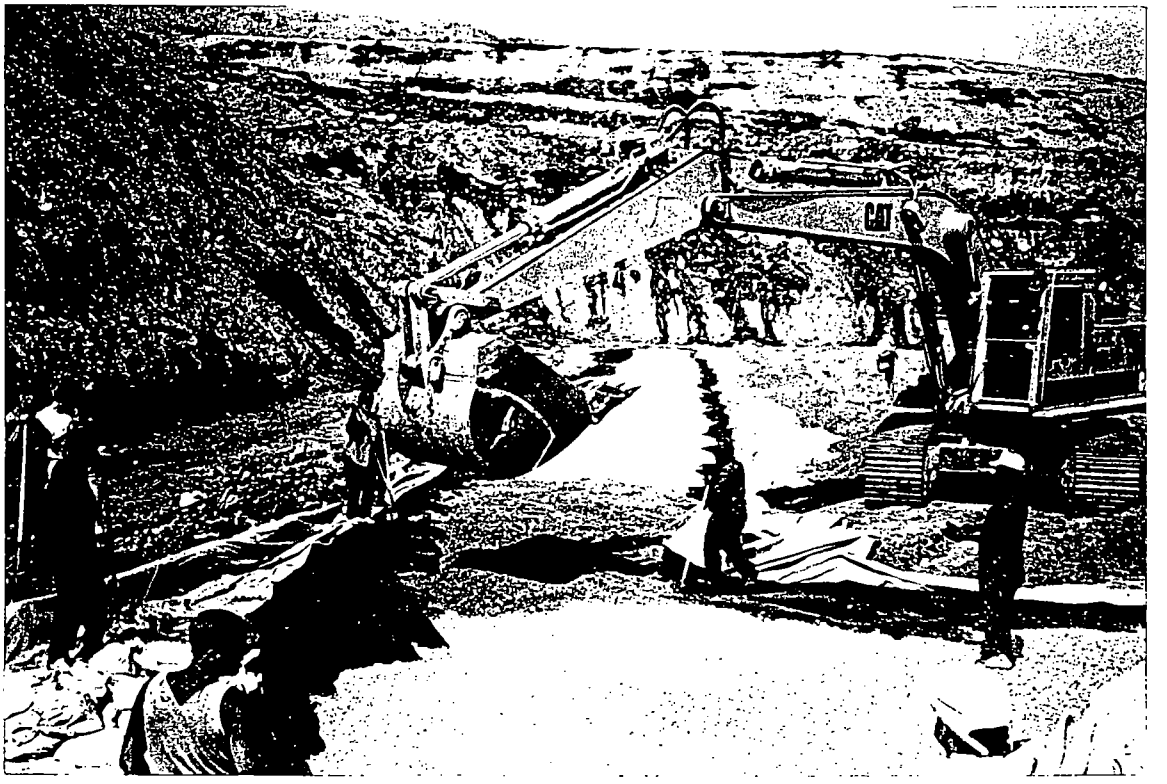
View of LALC butt-fusion welding procedure used to construct the 18-in. (440-mm) diameter HDPE slope riser pipe.



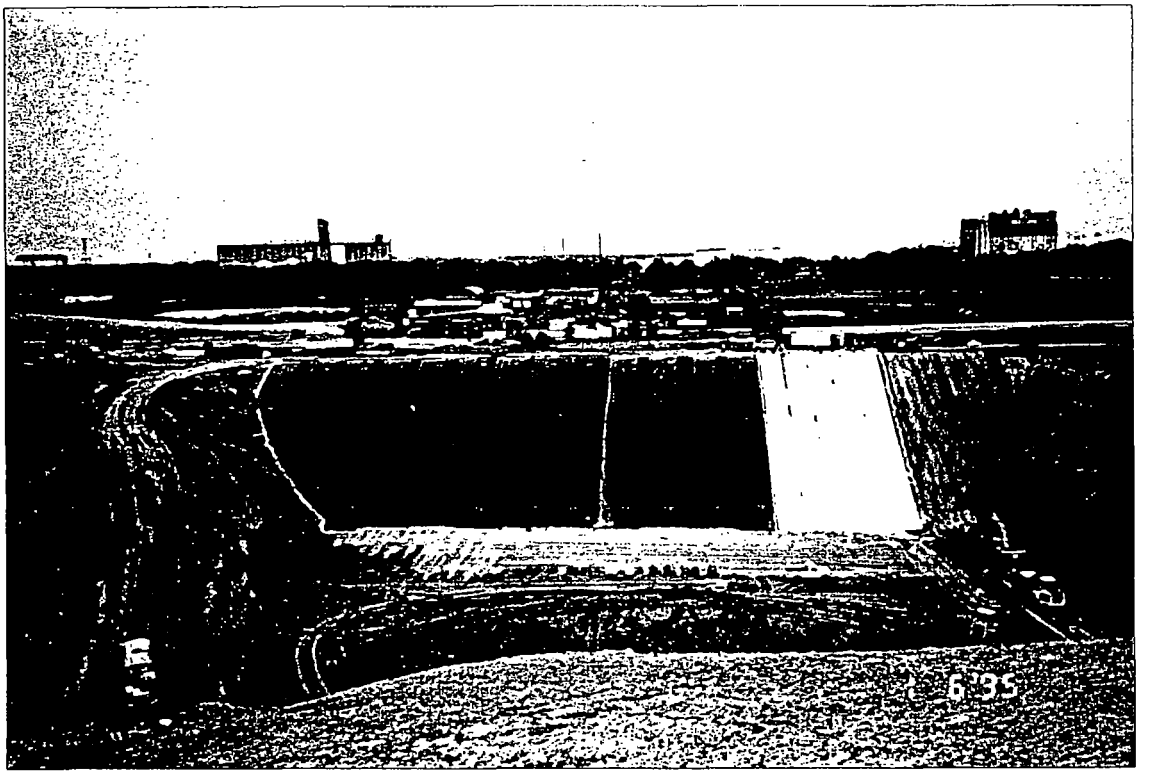
View looking northwest of LALC's protective cover sand placement operations on the base of the cell.



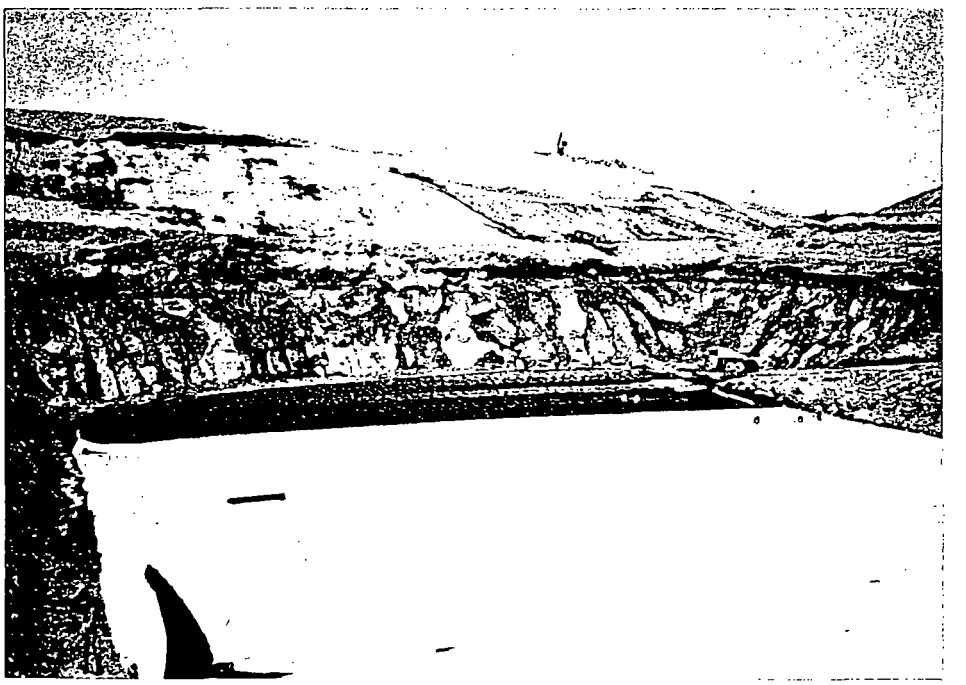
View looking west during installation of the 18-in. (440-mm) diameter slope riser pipe and 6-in. (150-mm) diameter leachate collection pipes.



View, looking west, of LALC's pipe bedding gravel installation procedures.



View of the Cell VI east sideslope during installation of the 60-mil (1.5-mm) thick textured HDPE geomembrane and geocomposite.



View looking northwest of the base of Cell VI during installation of the geonet and 7 oz/yd^2 (240 g/cm^2) nonwoven polyester geotextile.

APPENDIX B

DAILY AND WEEKLY FIELD REPORTS

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 7 day MAY month 1995 year

CONSTRUCTION ACTIVITIES FOR WEEK ENDING 7 MAY 1995

COMPACTED CLAY LINER:

GEOSYNTEC CONSULTANTS MONITORED AS LAND OF LAKES CO. (CONTRACTOR) EXCAVATES CLAY MATERIAL FROM BASE OF CELL VI, TO BE USED AS CLAY LINER MATERIAL. CREW HAULING CLAY TO CREST OF EAST SLOPE, USING A CAT-D6 AND CAT-D7 DOZERS TO SPREAD CLAY DOWN THE EAST SLOPE. THEN COMPACTING THE CLAY IN 6" LIFTS USING A CAT D6 DOZER AND CAT-825C COMPACTOR (MIN. TWO PASSES), TO MEET COMPACTION REQUIRMENTS. CREW PLACED TWO 6' LIFTS OF CLAY ON THE EAST SLOPE FROM N 11710 – N 11930 TO TOE OF SLOPE. IN ADDITION CREW PLACED AND COMPACTED LIFT #1, FROM N 11930 – N 12025 TO TOE OF SLOPE.

CONFORMANCE AND PERFORMANCE TESTING:

GEOSYNTEC OBTAINED 3 CLAY CONFORMANCE SAMPLE C.C.L. #2 – C.C.L. #4, MEETING SPECIFICATION REQUIRMENTS OUTLINED IN CQA PLAN TABLE VIII B-2. GEOSYNTEC CONDUCTED 6 FIELD MOISTURE/DENSITY TEST DURING THE WEEK ON LIFTS 1 AND 2. WITH 3 FAILING DENSITY TEST, CREW REWORKED AREAS. THESE AREA WILL BE RETESTED UNTIL GEOSYNTEC OBTAINS PASSING DENSITY TEST AS REQUIRED BY THE CQA PLAN. IN ADDITION GEOSYNTEC OBTAINED ONE SHELBY TUBE SAMPLE S.T. #1 AT FIELD DENSITY LOCATION #5, AT 1 PER ACRE PER ALTERATE LIFTS AS REQUIRED BY THE CQA PLAN.

COPY TO: LARRY EMERSON PER: David Williams

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 27 day APRIL month 1995 year

CONTRACTOR:

WEATHER: OVER CAST, W/ RAIN @ 48°

0700 ON SITE

- PLAN TO MEET WITH JOHN PRUSKO (CONSTRUCTION MANAGER) BUT MR. PRUSKO WILL NOT BE ON SITE TODAY, DUE TO RAIN.
- NO CONSTRUCTION ACTIVITIES DUE TO RAIN.

GEOSYNTEC TOUR SITE, AND BEGIN TO SET UP FIELD OFFICE, IN LIQUID RECOVERY SYSTEMS LABORATORY AREA.

- RAY MALMGREN (PLANT MANAGER) NOT ON SITE TODAY, WILL MEET WITH HIM ON FRIDAY.
- GEOSYNTEC WILL REVIEW PLANS AND SPECIFICATIONS OF LAND OF LAKES CELL VI,

1500 DEPART SITE

COPY TO: LARRY EMERSON PER: David Williams HRS: 8

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 28 day APRIL month 1995 year

CONTRACTOR:

WEATHER: CLEAR, 45° WITH LIGHT WINDS

0700 ON SITE.

MEET WITH JOHN PRUSKO (CONSTRUCTION MANAGER), NO CONSTRUCTION ACTIVITIES DUE TO HEAVY RAINS, CREW PUMPING STANDING WATER FROM CELL's FLOOR.

GEOSYNTEC TOUR SITE, JOHN PRUSKO STATES THAT THEY PLAN TO PLACE CLAY MATERIAL ON MONDAY MORNING.

GEOSYNTEC RETURN TO FIELD OFFICE, WILL CONTINUE TO REVIEW SPECIFICATION AND INVENTORY SUPPLIES ON SITE.

MEET WITH RAY MALMGREN (PLANT MANAGER)

1500 DEPART SITE

COPY TO: LARRY EMERSON PER: David Wilson HRS: 8

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 1 day 5 month 1995 year

CONTRACTOR: Land and Lakes Co.

WEATHER: OVERCAST, 55° WITH LIGHT WINDS

0600 ON SITE.

MEET WITH JOHN PRUSKO, NO CONSTRUCTION ACTIVITIES, EXCEPT CREW WILL PUMP STANDING WATER, FROM CELL FLOOR. STANDING WATER DUE TO RAIN OVER THE WEEKEND.

• GEOSYNTEC TOUR SITE, INFORM JOHN PRUSKO THAT AS SOON AS POSSIABLE I NEED TO TAKE 2 CONFORMANCE SAMPLES OF CLAY SOIL MATERIAL, CCL#2 & CCL#3. NOTE: CCL.#1 TAKEN ON 16TH OF MAY.

• REVIEW AND REVISE CONFORMANCE SAMPLE'S TESTING CRITERIA AND PREFORMANCE SAMPLES TESTING, DISCUSSED WITH DAN SCHAVER (PROJECT MANAGER, GEOSYNTEC) TESTING FREQUENCIES ON SOIL MATERIAL'S.

• TOUR SITE, CELL II GEOSYNTEC WILL CONDUCT FIELD DENSITY TEST ON BASE OF CELL ALONG TOE OF EAST SLOPE, TO GIVE INDICATION OF THE MOISTURE CONTENT OF THE CLAY MATERIAL TO BE USED AS CLAY LINER MATERIAL. MOISTURE CONTENT IS IN THE RANGE OF 9.5 – 10.5 % READING ON A NUCLEAR DENSITY GUAGE; OPTIMUM MOISTURE OF SOIL SAMPLE CCL#1 IS AT 11.7 %

1500 • DEPART SITE TO PICK UP 5 GAL. BUCKETS W/LIDS AND OTHER SUPPLIES TO SHIP SOIL SAMPLES.

1630 DEPART HOME DEPOT FOR HOTEL.

COPY TO: LARRY EMERSON PER: David Williams HRS: 10.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 26 day 5 month 1995 year

CONTRACTOR: L&L CO.

WEATHER: OVERCAST, 50° LIGHT WINDS

0600 ON SITE

- CONTRACTOR PLAN'S TO CONTINUE TO EXCAVATE CLAY MATERIAL FROM FLOOR OF CELL #VI, SOUTH EAST CORNER. IN ADDITION CREW CONTINUE TO PUMP STANDING WATER BASE OF CELL VI.
- GEOSYNTEC TALKED WITH D. SCHAUER (GEOSYNTEC) AND HARRY TOMLENSON (GEOSYNTEC) DISCUSS CHANGE TO DESIGN; ON 5" FORCE MAIN TO A 6" FORCE MAIN & CHANGE SDR FROM 15.5 TO 17 DUE TO INVENTORY SUPPLIES. THEN CHANGE CLAY LINER LIFTS TO 10" COMPACTED FROM 6" COMPACTED LIFTS.
- COLLECT SOIL SAMPLES FOR COMPACTED CLAY LINER, CONFORMANCE SAMPLES #C.C.L. #2 & #3, SEE SOIL SAMPLE LOG. WILL FED. EX. ALL SOIL SAMPLE TO GEOSYNTEC (G.E.L.) IN ATLANTA GA. FOR TESTING.
- PRE CONSTRUCTION MEETING.
- TOUR CELL VI, GEOSYNTEC CONDUCT FIELD DENSITY TEST ALONG BASE OF EAST SLOPE, TO DETERMINE MOISTURE CONTENT OF CLAY MATERIAL. MOISTURE CONTENT RUNNING APPROXIMATE 10 %. DISCUSS WITH JOHN PRUSKO MOISTURE CONTENT OF IN-SITU MATERIAL, GEOSYNTEC WILL TAKE MOISTURE CONTENTS WHEN PLACEMENT & COMPACTION BEGINS ON WED. MAY 3rd

1530 DEPART SITE FOR FEDERAL EXPRESS OFFICE

1630 DEPART FED. EX. OFFICE

COPY TO: LARRY EMERSON PER: David Williamson HRS: 10.5

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 3 day MAY month 1995 year

CONTRACTOR: Land and Lakes

WEATHER: 50° CLEAR WITH LIGHT WINDS

0600 ON SITE

CONTRACTOR (LAND AND LAKES CO.) SUPERINTENDENT JOHN PRUSKO PLAN'S TO CONTINUE TO EXCAVATE TO CLAY SUBGRADE AND PLANS TO BEGIN PLACING THE FIRST LIFT ON THE EAST SLOPE. JOHN STATES THAT HE WILL PLACE LIFT #1 USING AN D-7 DOZER, THEN COMPACT LIFT USING A TAG-A-LONG COMPACTOR.

SURVEYOR ON SITE AT 0905 HRS., CREW WILL SHOOT CLAY SUB GRADE ON THE EAST SLOPE AND 50' WEST OF EAST TOE OF SLOPE. (L.S.C.I. LAND SURVEYORS)

· GEOSYNTEC MONITORING ACTIVITIES BY CONTRACTOR CREW, EXCAVATING AT TOE OF EAST SLOPE OUT APPROXIMATE 60'. SURVEYOR'S CHECKING CLAY SUB-GRADE ALONG TOE OF SLOPE BEFORE ANY CLAY MATERIAL IS PLACED. IN ADDITION GEOSYNTEC RUNNING STANDARD COUNTS ON THE NUCLEAR DENSITY GUAGE (TROXLER 3430)

1300 · GEOSYNTEC CONTINUE TO MONITOR, CONSTRUCTION ACTIVITIES; CREW USING A CAT 235; C TO EXCAVATE CLAY MATERIAL ALONG EAST SLOPE AT THE NORTH EAST TOE. CREW USING 4 (DUMP TRUCKS) VOLVO BM, A-35 TO HAUL CLAY FROM BASE OF CELL AND STOCKPILING MATERIAL NORTH WEST OF CELL VI AND ONE D-7 DOZER (CAT).

· CONDUCTING TEST, ESTABLISHING A RELATIONSHIP BETWEEN THE FIELD NUCLEAR DENSITY GUAGE AND LABORATORY MOISTURE CONTENT. GEOSYNTEC WILL TEST AT FIVE (5) LOCATIONS ALONG BASE OF CELL VI AND COMPARE RESULTS.

1630 · DEPART SITE.

COPY TO: LARRY EMERSON PER: David Williams HRS: 10.5

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 4 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES Co

WEATHER: OVER CAST W/LIGHT RAIN

0600 ON SITE

• CONSTRUCTION CREW CONTINUE TO EXCAVATE CLAY AT TOE OF EAST SLOPE OUT 50'.

GEOSYNTEC WEIGHTING SOIL MOISTURE CONTENTS #1-#5 TO ESTABLISH A RELATIONSHIP BETWEEN THE NUCLEAR DENSITY GUAGE AND LAB. MOISTURE CONTENT. DISCUSS RESULTS WITH JOHN PRUSKO CONCERNING MOISTURE CONTENT OF IN PLACE CLAY MATERIAL. RESULTS INDICATE THAT THE NUCLEAR DENSITY GUAGE MOISTURE READING ARE IN AN ACCEPTED RANGE, SEE ATT. TEST COMPARETSON.

1030 CREW BEGIN PLACING CLAY MATERIAL ALONG EAST 2:1 SLOPE, CREW HAULING MATERIAL FROM BASE OF CELL VI. CREW WILL USE A CAT-D7 & CAT D6 DOZER TO SPREAD 6" COMPACTED LIFT DOWN THE EAST SLOPE. NOTE: LIGHT RAIN CONTINUES.

GEOSYNTEC CONTINUE TO MONITOR PLACEMENT OF LIFT #1 (6" LIFT) ON THE EAST SLOPE, BEGIN PLACEMENT AT SOUTH END OF SLOPE. GEOSYNTEC COLLECTING PERFORMANCE SAMPLE # P.C.L. #1, FOR PREFORMANCE TESTING AND A ADDITIONAL CONFORMANCE CCL #4. WILL SHIP BOTH SAMPLES VIA FEDERAL EXPRESS TO G.E.L. IN ATLANTA, GA. LIGHT RAIN ENDS AT 1400 HRS.

1450 CREW BEGIN TO COMPACT USING A CAT D-7 LGP DOZER WITH A TAG-A-LONG SHEEP FOOT COMPACTOR, THE D-7 DOZER IS UNABLE TO PULL THE TAG-A-LONG UP THE SLOPE. JOHN PRUSKO STATES THEY WILL TRY TO COMPACT USING A CAT D8LGP DOZER TO TOW THE TAG-A-LONG COMPACTOR UP THE SLOPE.

EQUIPMENT:
- (SIX) VOLVO A35 DUMP TRUCKS
- ONE CAT-D-7 DOZER
- ONE CAT 235-C TRACK HOE
- ONE CAT D6H DOZER
- ONE, TAG-A-LONG SHEEP FOOT COMPACTOR

COPY TO: LARRY EMERSON PER: David Williams HRS: —

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

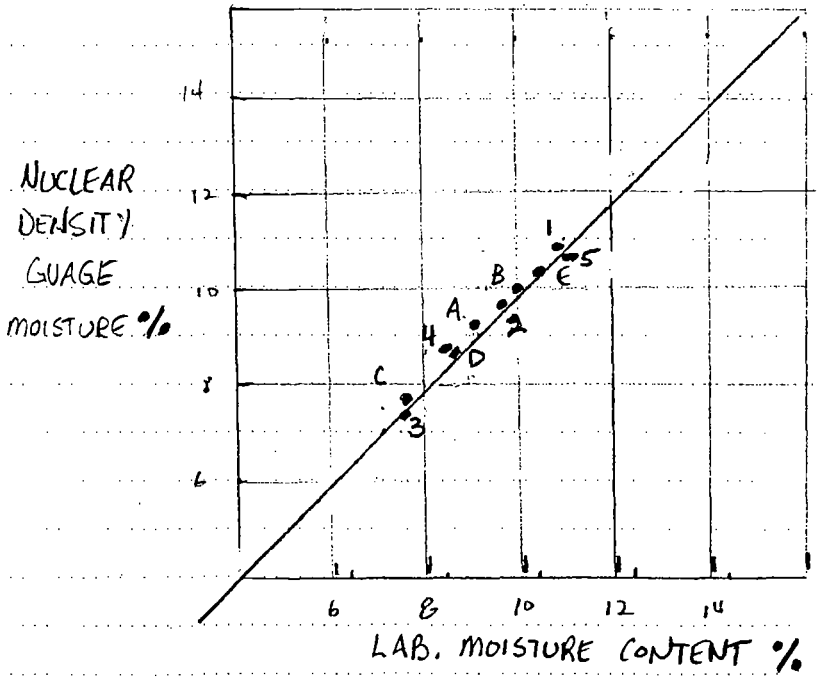
DESCRIPTION: CELL VI DATE: 4 day MAY month 1995 year

CONTRACTOR: Land and Lakes

WEATHER:

NUCLEAR GUAGE VS LAB. MOISTURE CONTENT

	SAMPLE #	1	2	3	4	5
	TARE #	201	202	102	203	204
A	WT. TARE	24.57	24.91	21.51	21.56	21.60
B	WT. W. SOIL W/TARE	136.14	120.04	103.14	108.32	112.62
	(B - C = D)					
C	WT. D. SOIL W/TARE -	125.25	111.62	97.41	101.30	103.63
D	WT. WATER (D÷A=F)	10.89	8.42	5.73	7.02	8.99
E	WT. D. SOIL (C-A=E)	100.68	86.71	75.90	79.74	82.03
		1	2	3	4	5
F	M.C. =	10.8	9.7	7.5	8.8	10.9
	NUCLEAR GUAGE MOISTURE READING	A 9.2	B 10.0	C 7.8	D 8.7	E 10.3



COPY TO: LARRY EMERSON PER: David Williams HRS: –

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 4 day 5 month 1995 year

CONTRACTOR: Land and Lakes Co.

WEATHER: OVER CAST WITH LIGHT WINDS

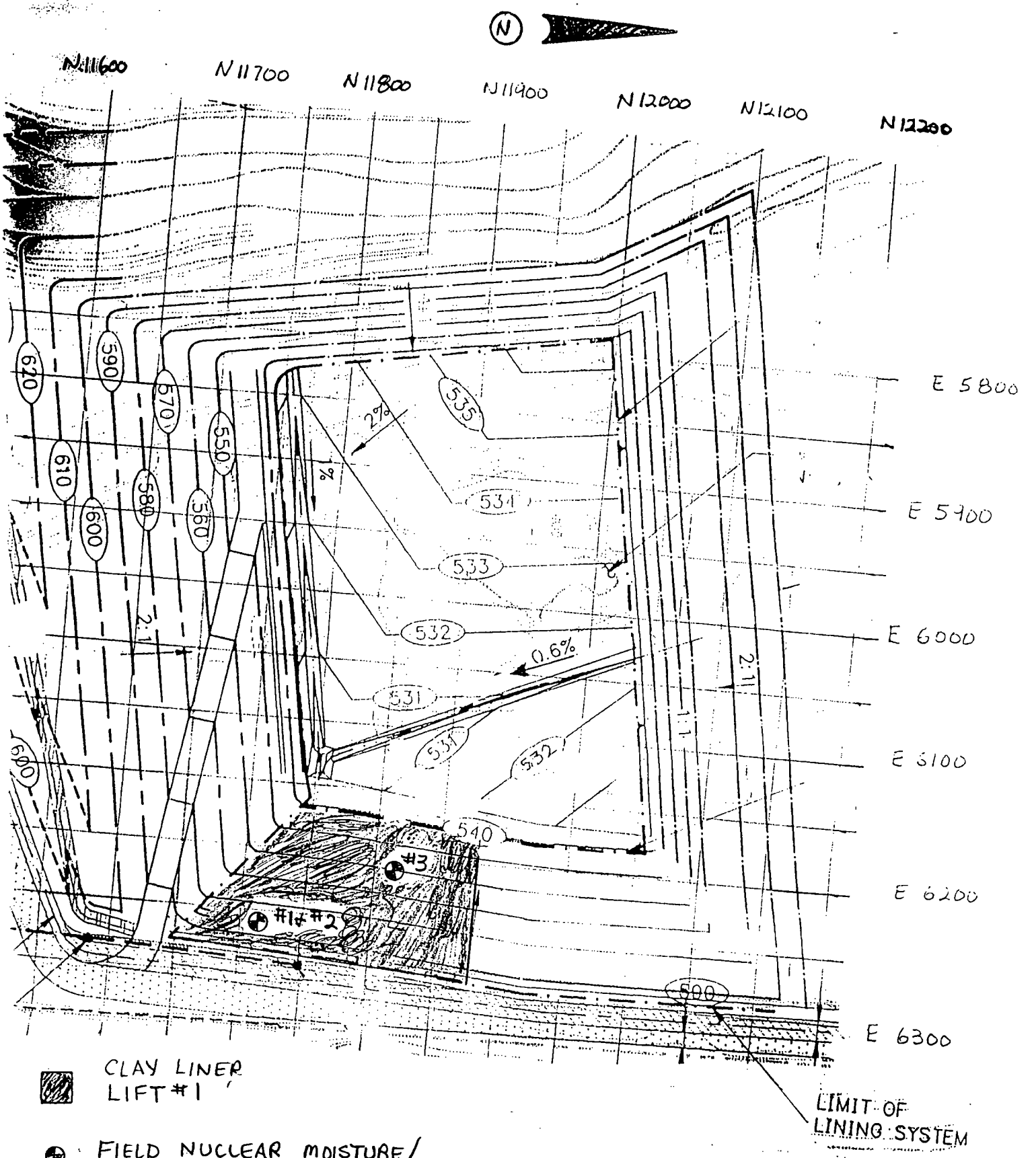
1530 CONSTRUCTION CREW STOP WORK, GEOSYNTEC RETURN TO FIELD OFFICE TO COMPLETE DAILY REPORTS AND PREPARE SOIL SAMPLES FOR SHIPPING.

1630 DEPART SITE, FOR FEDERAL EXPRESS OFFICE

1645 DEPART FED. EX. OFFICE FOR HOTEL.

COPY TO: LARRY EMERSON PER: David Williams HRS: 10.75

4 MAY 95


N
N11600
N11700
N11800
N11900
N12000
N12100
N12200
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
610
600
590
580
570
560
550
540
535
533
532
531
500
2%
2%
0.6%
2:1
2:1
1:1
#1 & #2
#3
CLAY LINER
LIFT #1
FIELD NUCLEAR MOISTURE/
DENSITY TEST LOCATION
TEST # 1 - # 3
LIMIT OF
LINING SYSTEM

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 5 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: CLEAR, 47° CALM

0600 ON SITE.

- CONTRACTOR, Land and Lakes Co (L.and L.) CONTINUE TO PLACE LIFT 1 ON THE EAST SLOPE OF CELL VI.
- GEOSYNTEC MONITORING AS CREW CONTINUES TO EXCAVATE CLAY FROM CELL VI FLOOR AREA, THEN HAUL CLAY TO CREST OF EAST SLOPE. CREW USING DOZER TO SPREAD A 6" LIFT, LIFT #1.
- RECEIVED LABORATORY TEST RESULTS ON SOIL CONFORMANCE SAMPLES #CCL#2 & CCL#3; CLAY MATERIAL MEETS JOB SPECIFICATIONS.
- LAND AND LAKES CREW PREPARING TO COMPACT LIFT 1, WITH TAG-A-LONG COMPACTOR. CREW UNABLE TO COMPACT UP THE SLOPE, SO CREW WILL HAVE TO COMPACT DOWN THE SLOPE AND DRIVE AROUND ON THE HAUL RD.

GEOSYNTEC WILL CONTINUE TO MOINTOR AND CONDUCT FIELD DENSITY TEST, USING A NUCLEAR DENSITY GUAGE (TROXLER 3430). FIELD DENSITY TEST (F.D.T.) NUMBER 1 FAILED, AREA WAS RECOMPACTED WITH A CAT-835 COMPACTOR; THEN AREA WAS RETEST (TEST #2) AND PASSED, SEE FIELD DENSITY TEST LOG. IN ADDITION GEOSYNTEC CONDUCTED DENSITY TEST #3 WHICH ALSO PASSED JOB SPECIFICATION SECTION 2230-7, 3.03-H.

1230 CREW PLACING LIFT #2 ON EAST SLOPE FROM N-11725 TO N-11930 TO TOE OF EAST SLOPE.

- GEOSYNTEC CONTINUE TO MONITOR & CONDUCT DENSITY TEST ON COMPACTED CLAY LINER. CLAY LINER MATERIAL DRYING DUE TO WARM, CLEAR CONDITIONS. LAND AND LAKES Co. CREW WILL USE A WATER TRUCK TO ADD MOISTURE TO CLAY MATERIAL BEING PLACED IN LIFT #2, DOWN EAST SLOPE.

EQUIPMENT
- 4 - VOLVO A 35 DUMP TRUCKS
- 1 - D6H LGP. DOZER
- 1 D7 LGP DOZER
- 1 D8H DOZER W/TAG-A-LONG COMPACTOR
- 1 CAT-235-C TRACKHOE
- 1 CAT-825 COMPACTOR
- 1 FORD WATER TRUCK

COPY TO: LARRY EMERSON PER: David Williams HRS: –

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 5 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 66° CLEAR W/LIGHT WINDS

SURVEYORS (L.S.C.) ON SITE, SHOOTING SUB-GRADE OF CLAY LINER AT TOE OF EAST SLOPE, NORTH END OF CELL VI.

· SURVEYOR DEPART SITE AT 1345 HRS., AS CREW CONTINUE TO PLACE AND COMPACT CLAY LINER ON THE EAST SLOPE.

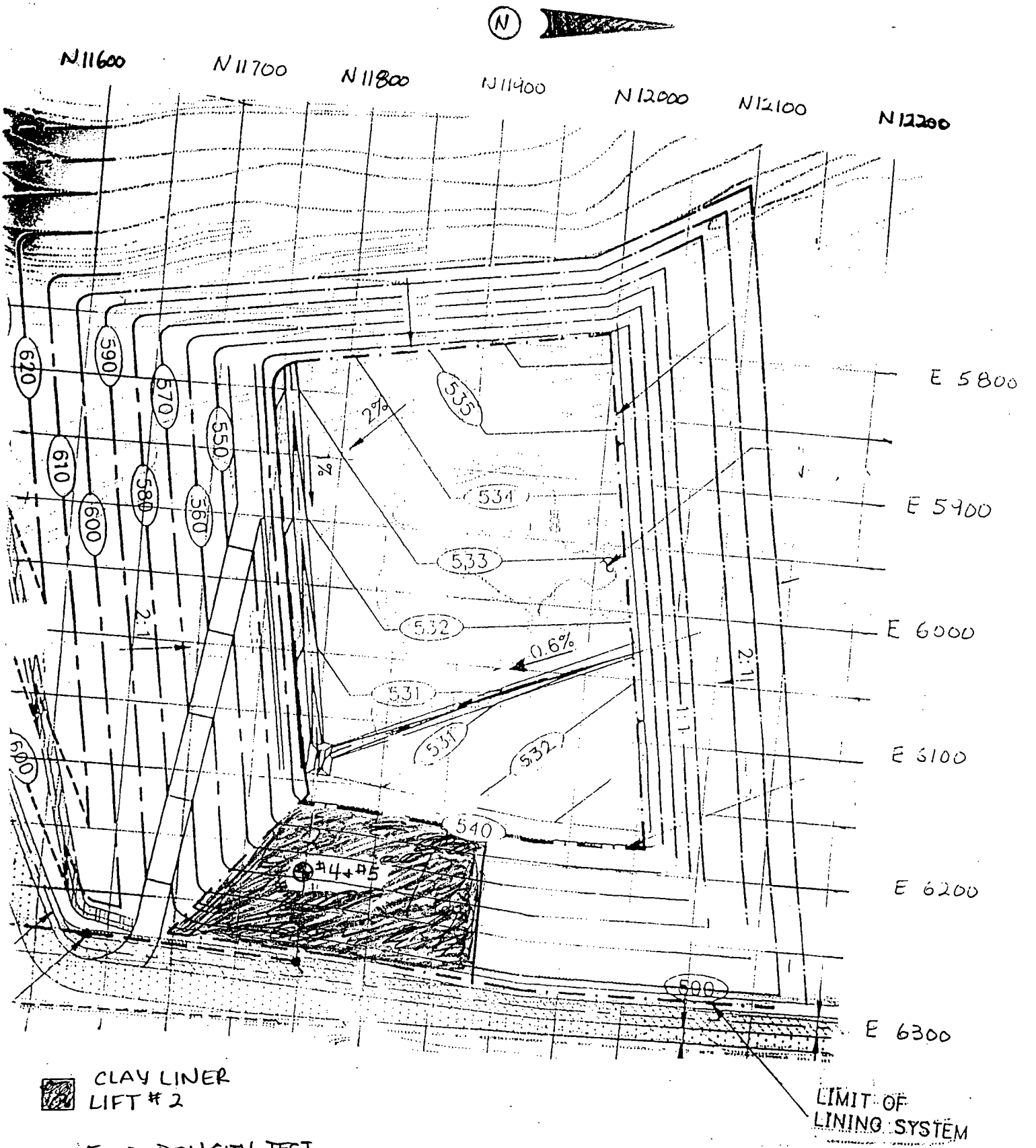
1630 GEOSYNTEC CONDUCTING DENSITY TEST ALONG EAST SLOPE LIFT #2, DENSITY TEST #4; FAILED DUE TO MOISTURE CONTENT BEING BELOW OPITJON MOISTURE CONTENT.

· CREW STOP WORK & DEPARTING SITE.

1715 · GEOSYNTEC OFF SITE.

COPY TO: LARRY EMERSON PER: David Williams HRS: 11.25

5 MAY 95


N
N11600
N11700
N11800
N11900
N12000
N12100
N12200
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
590
570
550
610
580
560
600
535
534
533
532
531
540
500
2%
1%
0.6%
2:1
#4 & #5
CLAY LINER LIFT #2
FIELD DENSITY TEST LOCATION #4 & #5
LIMIT OF LINING SYSTEM

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 6 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: CLEAR, 52° LIGHT WINDS

0600 ON SITE

CREW WILL CONTINUE TO COMPACT AND ADD MOISTURE TO LIFT 2 ALONG EAST SLOPE. IN ADDITION CREW BEGIN TO PLACE LIFT #1 ON THE EAST SLOPE FROM N 11930 TO N 12100.

- GEOSYNTEC MONITORING PLACEMENT OF LIFT #1, CREW PLACING CLAY MATERIAL AT CREST OF EAST SLOPE, THEN USING DOZER'S TO PUSH LIFT 1 DOWN SLOPE. GEOSYNTEC CONDUCTING FIELD DENSITY TEST ON LIFT #2, AS CREW CONTINUE'S TO COMPACT WITH CAT-825 COMPACTOR AND D8 DOZER. TAKING SHELBY TUBE (S.T.) #1, FROM LIFT #2 AT FIELD DENSITY TEST # 5, SEE DENSITY TEST LOG.
- RETURN TO FIELD OFFICE TO PREPARE ST #1 FOR SHIPMENT TO G.E.L, FOR HYDRAULIC CONDUCTIVITY TESTING.
- LAND AND LAKES CREW CONTINUE TO PLACE AND COMPACT CLAY MATERIAL FROM N11930 TO N 12100 TO TOE OF EAST SLOPE. NOTE: CREW MAKING 2 PASSES WITH THE CAT 825 COMPACTOR AND 4 PASSES USING THE D8H DOZER.
- GEOSYNTEC TESTING LIFT #1, BEING PLACED & COMPACTED ALONG EAST SLOPE. GEOSYNTEC FILLING & COMPACTING CLAY MATERIAL IN ALL PERFORATIONS DUE TO FIELD DENSITY TEST, SHELBY TUBE LOCATION AND LIFT THICKNESS CHECK LOCATIONS. FIELD DENSITY TEST # 6 FAILED TO MEET SPECIFICATION REQUIRMENTS.

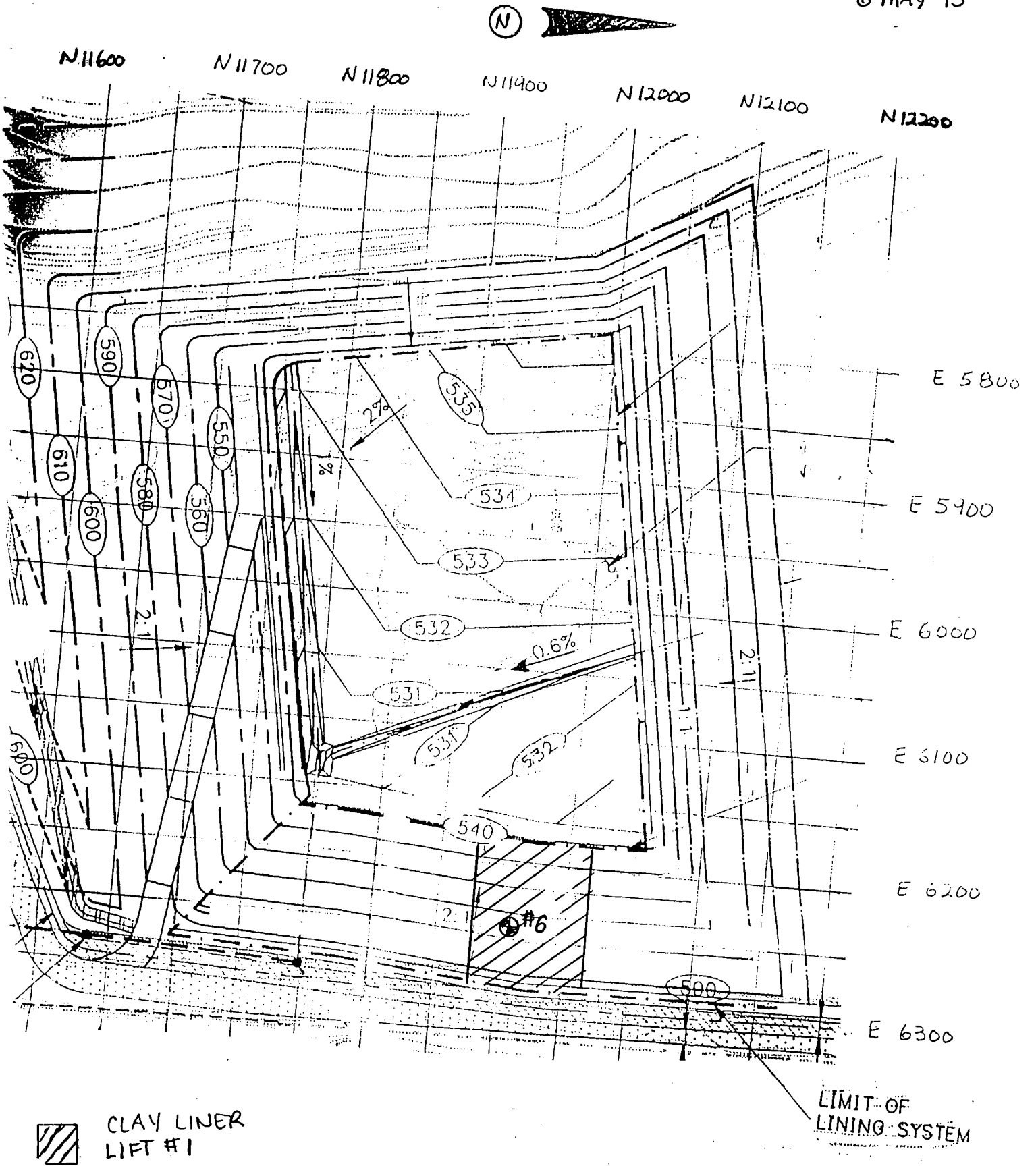
1400 CREW STOP WORK & DEPART SITE; GEOSYNTEC OFF SITE

EQUIPMENT:
- 5 - VOLVO A35 DUMP TRUCKS
- 3 DOZERS, D6H, D7 LGP AND D8H
- 1 CAT 235-C TRACK HOE
- 1 CAT 825 COMPACTOR
- 1 FORD WATER TRUCK

(24)

COPY TO: LARRY EMERSON PER: David Williams HRS: 8

6 MAY 95



CLAY LINER LIFT #1

FIELD DENSITY TEST LOCATION #6

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 7 day MAY month 1995 year

CONTRACTOR: LAND OF LAKES Co.

WEATHER: —

1200 GeoSyntec reviewing daily reports, soil sample log and field nuclear moisture/density test log. results; preparing weekly field report.

1400

COPY TO: LARRY EMERSON PER: David Wilson HRS: 2

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 14 day 5 month 1995 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 14 MAY 1995, FOR CONSTRUCTION OF CELL VI

COMPACTED CLAY LINER

LAND AND LAKES CO. (CONTRACTOR) CONTINUE CONSTRUCTION ACTIVITIES WITH IN CELL VI. CREW REWORKED AREA WHICHI FAILED FIELD MOISTURE/DENSITY TEST #6, LIFT #1. AREA WAS RETESTED USING A NUCLEAR DENSITY GUAGE AND PASSED REQUIRMENTS OUTLINED IN THE CQA PLAN. CREW CONTINUE TO PLACE ADDITIONAL LIFTS #2 - # 5 ALONG THE EAST SLOPE, THE SOURCE OF THE COMPACTED CLAY LINER MATERIAL, BEING EXCAVATED FROM BASE OF CELL VI USING A CAT 235C TRACKHOE. CREW PLACING 6" COMPACTED LIFTS USING TWO DOZERS A D6H AND D7, THEN COMPACTING MATERIAL WITH A CAT 825 C AND A CAT D6H DOZER. GEOSYNTEC MONITORING PLACEMENT AND COMPACTION METHODS BY THE CONTRACTOR ON LIFTS #2 - # 5.

SAMPLING AND TESTING

GEOSYNTEC CONDUCTED 9 FIELD DENSITY TEST DURING THE WEEK, 7 PASSED AND 2 FAILED FIELD DENSITY TEST REQUIRMENTS. OBTAINED PERFORMANCE SAMPLE, P.C.L.#2 FROM BASE OF CELL VI. GEOSYNTEC OBTAINED SHELBY TUBE (S.T.) SAMPLE #2 AND #3 ALONG EAST SLOPE, AT FIELD DENSITY TEST LOCATIONS. SOIL SAMPLE OBTAINED THIS WEEK WERE SHIPPED TO GEOSYNTEC CONSULTANTS LABORATORY (G.E.L.)

COPY TO: LARRY Emerson PER: David Williams and Bryan Tindell

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 14 day 5 month 1995 year

GEOSYNTEC RECIEVED DRAFT RESULTS ON CONFORMANCE SAMPLES CCL #2 AND CCL #3. LAB DRAFT RESULTS INDICATE SAMPLES MEET PROJECT SPECIFICATIONS. ALSO RECIEVED RESULTS ON PERFORMANCE SOIL SAMPLE PCL #1 AND SHELBY TUBE SAMPLE ST #1. RESULTS INDICATE THAT SAMPLES MEET PROJECT SPECIFICATIONS.

COPY TO: Larry Emerson PER: David Williams and Bryan Tindell

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 8 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: OVERCAST, 57° W/LIGHT RAIN

0545 ON SITE

- LAND AND LAKES Co. CREW WILL CONTINUE TO EXCAVATE CLAY MATERIAL FROM BASE OF CELL VI. HAULING CLAY MATERIAL FROM BASE OF CELL TO CREST OF EAST SLOPE. CREW USING DOZERS TO SPREAD CLAY MATERIAL DOWN EAST SLOPE, FROM N 12025 – N12140 TO TOE OF EAST SLOPE; LIFT #1.

GEOSYNTEC MONITORING PLACEMENT METHODS AS CREW PLACING LIFT #1 IN THE NORTH EAST CORNER OF THE EAST SLOPE. LIGHT RAIN CONTINUES OFF AND ON AT 0914 HRS. CREW USING TWO DOZER TO SHAPE AND COMPACT LIFT #1, ALSO USING 1 CAT 325C COMPACTOR (MIN. TWO PASSES) TO MEET COMPACTION REQUIRMENTS. CONDUCTING FIELD DENSITY TEST ON LIFT #1 (SEE ATTACHED GRID MAP FOR LOCATION); DENSITY TEST #7 MEETS SPECIFICATION REQUIRMENTS.

1050 HEAVY RAIN BEGINS, CONSTRUCTION ACTIVITIES STOPPED DUE TO RAIN.

- GEOSYNTEC RETURN TO FIELD OFFICE, DISCUSS CONSTRUCTION ACTIVITIES WITH JOHN PRUSKO (LAND OF LAKES Co.)
- TALKED WITH B. SIGMON (G.E.L.), DISCUSS SOIL TEST RESULTS.

1415 • CREW SCRAPE/CUT SURFACE TEST, SO THAT, GEOSYNTEC CAN CONDUCT FIELD DENSITY TEST #8, A RETEST OF TEST #6 WHICH FAILED TESTING REQUIRMENTS. DENSITY TEST #8 PASSED REQUIRED SPECIFICATION OUT LINED IN SECTION 02230-7, 3.03 - H

- NOTE: RAIN STOPPED AT 1330 HRS.
- CREW BEGIN TO PLACE LIFT #2, FROM N 11930 – N 12140 TO TOE

EQUIPMENT:
- 1 CAT 235C TRACK HOE
- 4 VOLVO A 35 DUMP TRUCKS
- 3 CAT D7H, D6 AND D8 DOZERS
- 1 CAT 325C COMPACTOR
- 1 CAT 613B WATER TRUCK

COPY TO: LARRY EMERSON PER: David Wilkins HRS: –

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 8 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: OVERCAST, 51° W/MODERATE WINDS.

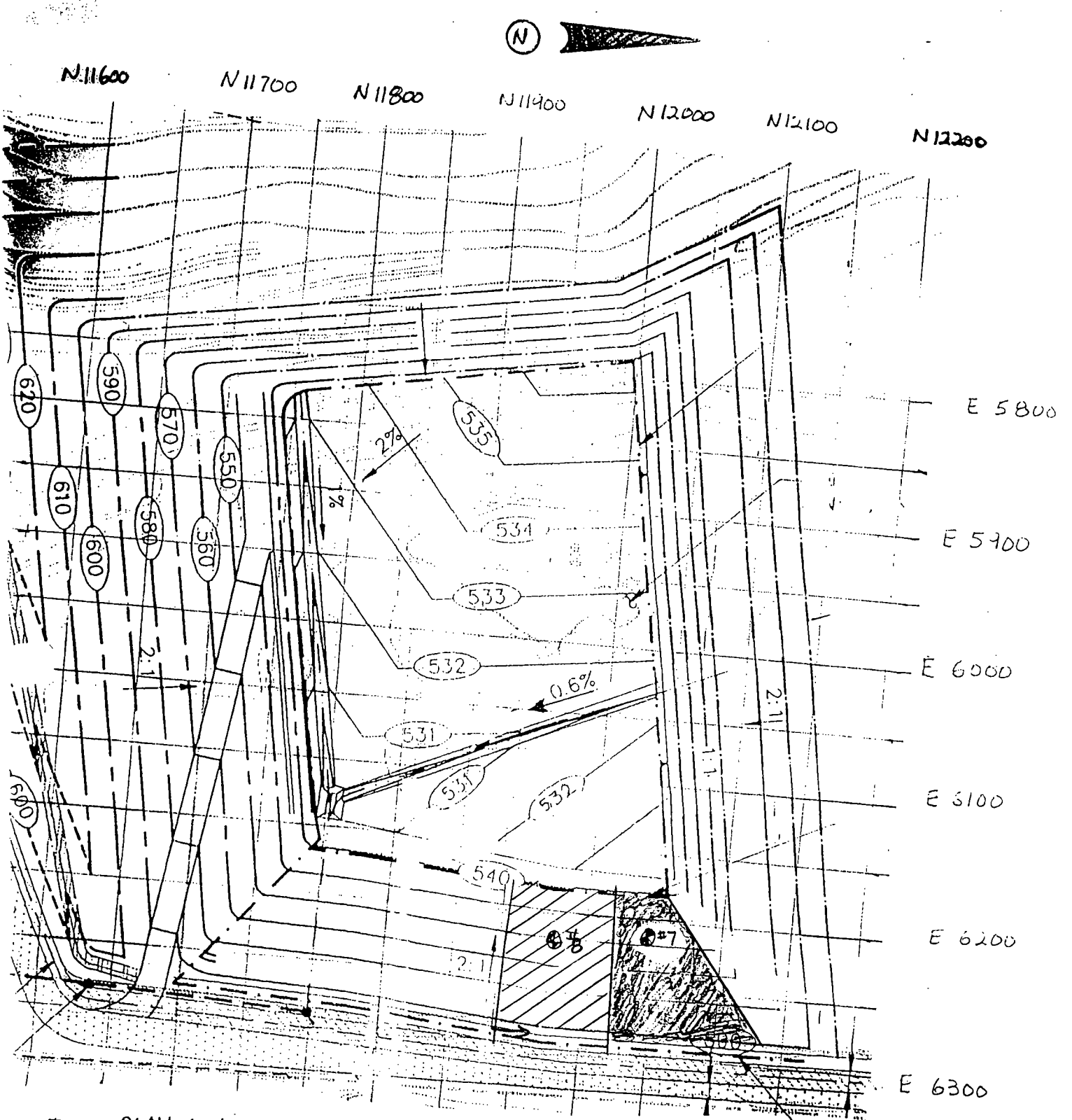
OF EAST SLOPE, USING A D6H + D7 DOZER

1650 CREW STOP WORK, GEOSYNTEC RETURN TO FIELD OFFICE TO COMPLETE DAILY REPORT & STORE EQUIPMENT.

1715 DEPART SITE

COPY TO: LARRY EMERSON PER: David Williams HRS: 11.5

8 MAY 95



CLAY LINER LIFT #1

CLAY LINER LIFT #1
TO BE REWORKED & RETESTED (FAILED TEST #6)

⊕ : FIELD DENSITY TEST LOCATION TEST #7

⊕ DENSITY TEST #8

NOTE: CREW PLACING LIFT #2, FROM N 11930 – N 12140

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 9 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER:

0545 ON SITE, MEET WITH H. TOMLINSON (GEOSYNTEC PROJECT ENG.), TOUR SITE AND DISCUSS CONSTRUCTION ACTIVITIES.

- LAND OF LAKES CREW CONTINUE TO PLACE LIFT #2 FROM N11930 – N 12025 TO TOE OF EAST SLOPE. CREW USING A D6H LGP DOZER TO SPREAD THE 6" LIFT THICKNESS, DOWN THE EAST SLOPE.

0930 · CREW BEGIN USING A CAT-825C COMPACTOR MAKING 2 PASSES, AS CREW CONTINUE TO ADD MOISTURE USING A CAT-613B WATER TRUCK. PLACEMENT OF LIFT #3 ON EAST SLOPE FROM N-11725 – N 11930 TO TOE OF EAST SLOPE

- GEOSYNTEC MONITORING CLAY PLACEMENT AND COMPACTION OF EACH 6" COMPACTED LIFT BEING PLACED ON THE EAST SLOPE OF CELL VI, (LIFT #2).

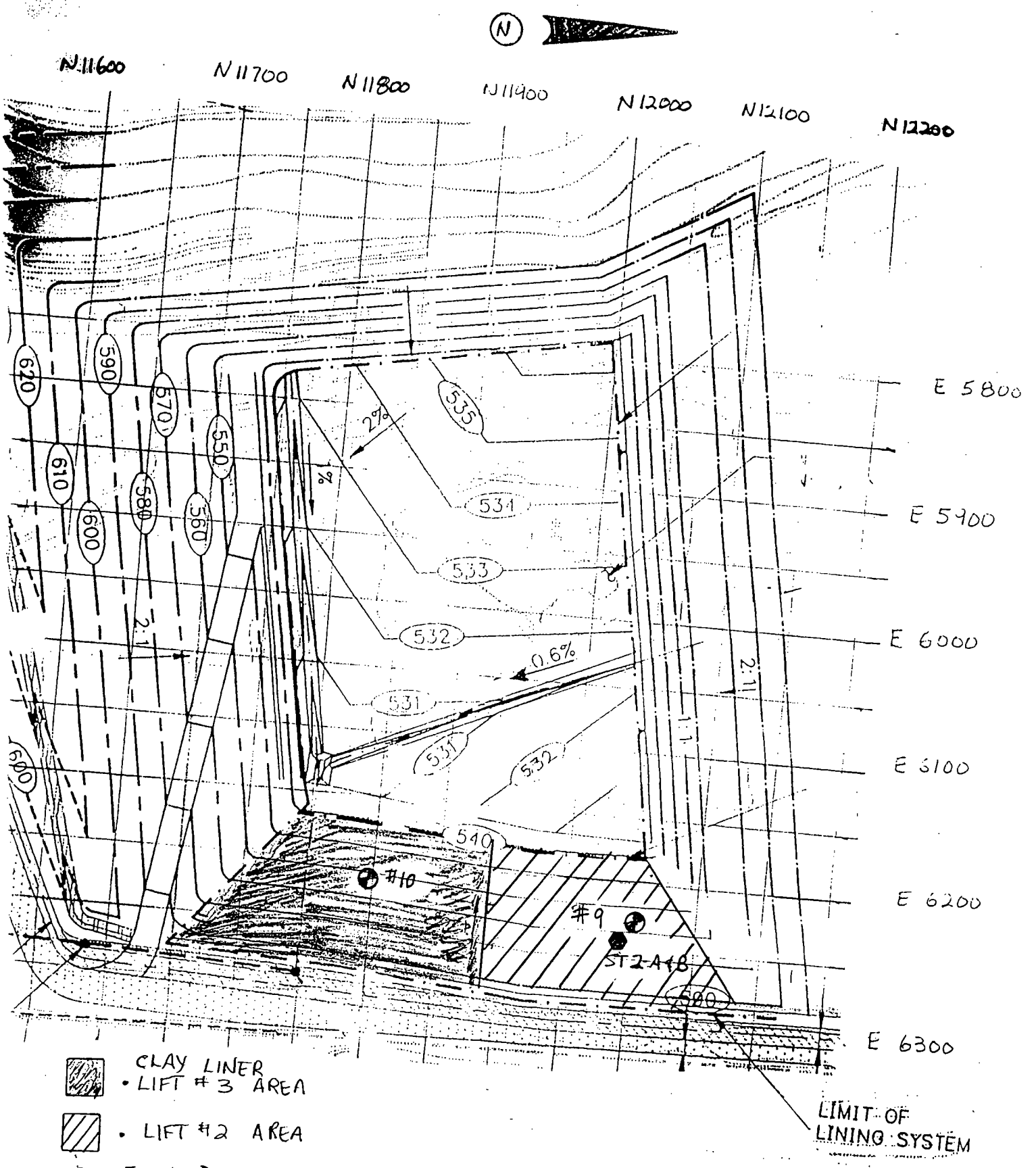
1200 · H. TOMLINSON DEPART SITE. GEOSYNTEC COLLECTING PREFORMANCE SAMPLE # PCL #2 FOR TESTING AT G.E.L. IN ATLANTA, GA.

- GEOSYNTEC CONDUCTING FIELD DENSITY TEST ON LIFT #2, PLACED ON THE EAST SLOPE FROM N 12025 – N 11930. DENSITY TEST #9 MEET SPECIFICATION REQUIRMENTS, IN ADDITION GEOSYNTEC COLLECTED SHELBY TUBE #2 (A&B) FROM DENSITY TEST LOCATION #9, LIFT 2 NORTH END OF SLOPE.
- LAND LAKES CREW ALSO PLACING AND COMPACTING LIFT #3 IN 6" LIFTS ALONG EAST SLOPE, SOUTH END OF SLOPE. GEOSYNTEC MONITORING AS CREW PLACES 6" COMPACTED LIFT #3 FROM N 11700 – N 11930 ALONG EAST SLOPE. WILL CONDUCT FIELD DENSITY TEST ON LIFT #3, USING A NUCLEAR MOISTURE DENSITY GUAGE, NOTE: GEOSYNTEC RUNNING STANDARD COUNT ON THE NUCLEAR GUAGE EACH DAY OF USE; SEE STANDARD COUNT LOG. FIELD DENSITY TEST #10 PASSED ON LIFT #3, SEE ATTACHED SKETCH.
- LAND AND LAKES CREW STOP WORK & DEPART SITE, AT 1600HRS

1630 GEOSYNTEC DEPARTS FOR FED. EX. OFFICE TO SHIP SOIL SAMPLES.

COPY TO: LARRY EMERSON PER: David Wilson HRS: 11.25

9 MAY


N
N 11600
N 11700
N 11800
N 11900
N 12000
N 12100
N 12200
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
590
570
550
610
600
580
560
690
535
531
533
532
540
2%
1%
0.6%
2:1
1:1
#10
#9
ST 2-A & B
500
CLAY LINER
• LIFT #3 AREA
• LIFT #2 AREA
FIELD DENSITY TEST LOCATION
SHELBY TUBE LOCATION
ST #2-A & ST 2-B
FROM LIFT #2
LIMIT OF
LINING SYSTEM

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 10 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: CLEAR, 58° LIGHT WINDS

0545 ON SITE

· GEOSYNTEC TOUR SITE, DUE TO HEAVY RAIN, CREW UNABLE TO WORK IN CELL VI AREA. CREW STANDING BY; WILL CONTINUE CONSTRUCTION ACTIVITIES AS SOON AS FIELD CONDITIONS IMPROVE.

1000 CONDITIONS: CLOUDY SKY WITH LIGHT RAIN

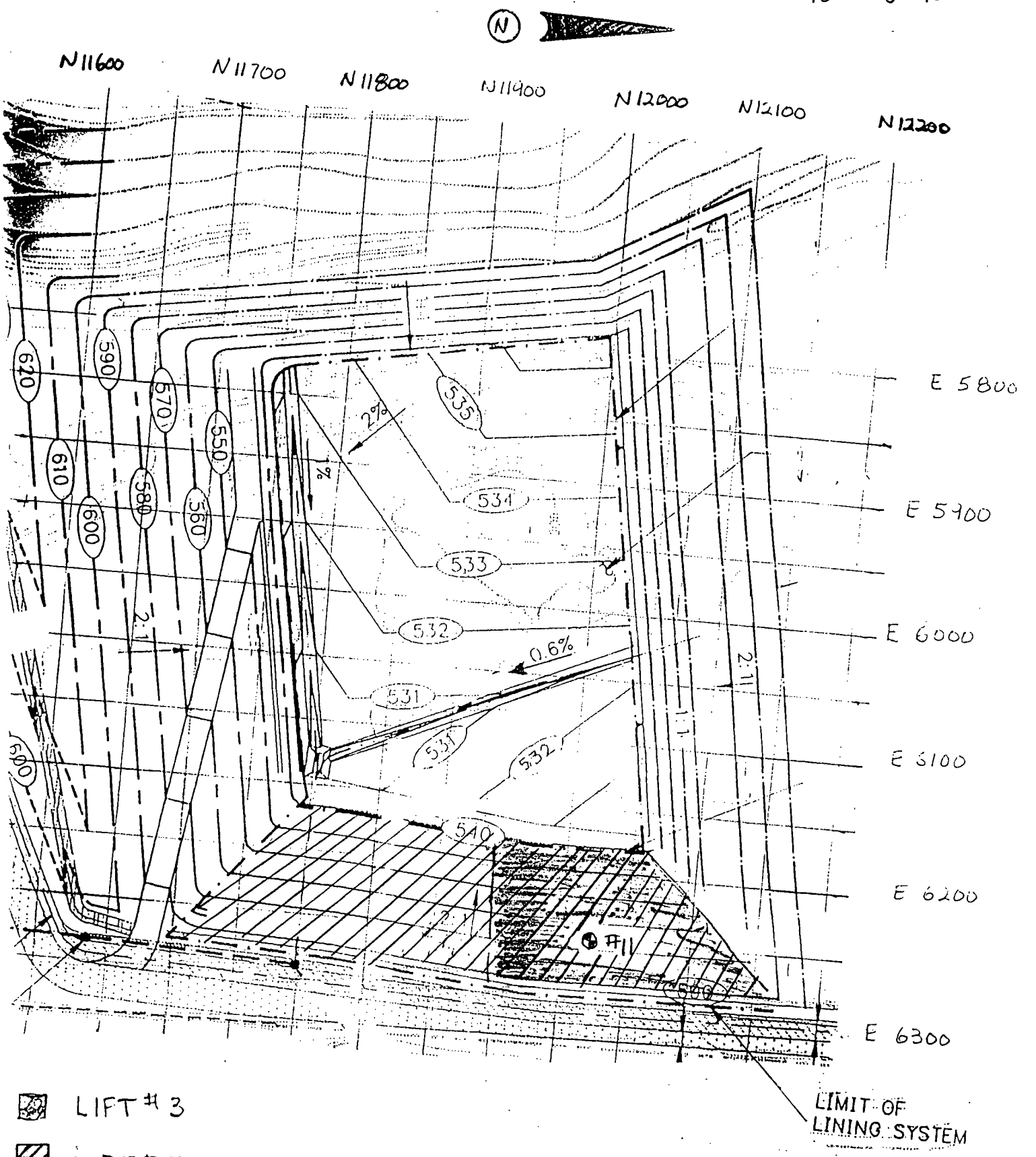
· GEOSYNTEC DISCUSS SOIL TESTING OF CONFORMANCE SAMPLES WITH BARRY SIGMON, GEOSYNTEC (GEL). AWAITING FAX FROM MR. SIGMON TO REVIEW SOIL TEST RESULTS.

1300 TOUR SITE WITH JOHN PRUSKO, LIGHT RAIN OFF AND ON. DISUSSING FIELD CONDITION, CREW UNABLE TO WORK IN CELL VI DUE TO RAIN & SATURATED CLAY LINER ON EAST SLOPE.

1400 GEOSYNTEC DEPART SITE.

COPY TO: LARRY EMERSON PER: David Williamson HRS: 8

10 MAY 95



LIFT #3

LIFT #4

FIELD MOISTURE/DENSITY TEST LOCATION.
TEST #11 - PASSED

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 10 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES Co

WEATHER: CLEAR, 53°F, LIGHT WINDS

0545 ON SITE

- LAND AND LAKES CREW CONTINUE TO PLACE LIFT #3 IN A 6" COMPACTED LIFT, ALONG THE EAST SLOPE. CREW USING A D6H AND D7 DOZER TO SPREAD THE LIFT. CLAY MATERIAL BEING EXCAVATED FROM BASE OF CELL VI, THEN USING VOLVO A35's TO HAUL CLAY MATERIAL TO CREST OF EAST SLOPE. USING DOZERS TO SPREAD CLAY MATERIAL DOWN THE EAST SLOPE OF CELL VI
- GEOSYNTEC MONITORING CREW AS THEY SPREAD & COMPACT LIFT #3 ALONG THE SLOPE, CREW USING A CAT 825-C COMPACTOR (MIN. 2 PASSES) AND D6H DOZER TO COMPACT CLAY LIFT #3. GEOSYNTEC MONITORING PLACEMENT AND COMPACTION OF LIFT 3 AND AS CREW BEGIN TO PLACE LIFT #4 ACROSS THE EAST SLOPE. GEOSYNTEC CONDUCTING FIELD MOISTURE/DENSITY TEST ON LIFT #3, AT NORTH END OF EAST SLOPE. (SEE ATTACHED FIELD SKETCH). DENSITY TEST #11 PASSED FIELD DENSITY TEST REQUIRMENTS OUTLINED IN THE CQA PLAN

1300 LAND AND LAKES CREW CONTINUE TO PLACE LIFT #4, AS GEOSYNTEC MONITOR PLACEMENT METHODS BY THE CREW ALONG THE EAST SLOPE

- DISCUSS CONFORMANCE AND PERFORMANCE (SOIL SAMPLES) TEST RESULTS WITH HARRY TOMLINSON (PROJECT ENG.). GEOSYNTEC WILL CHANGE PROCTOR FROM 120.2 AT 12.2 OPTIMUM MOISTURE CONTENT, SOIL SAMPLE # CCL #1 TO A PROCTOR OF 122.0 AT 12.2 OPTIMUM MOISTURE CONTENT (O.M.C), SOIL SAMPLE # CCL #3.
- CREW CONTINUES PLACING LIFT #4, IN A 6" COMPACTED LIFT, OVER THE EAST SLOPE OF CELL #VI,

1700 - CREW STOP WORK, GEOSYNTEC RETURN TO FIELD OFFICE TO STORE DENSITY GUAGE & COMPLETE DAILY REPORT.

1720 DEPART SITE

COPY TO: LARRY EMERSON PER: David Williams HRS: 11.5

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 12 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: CLEAR, 55° W/LIGHT WIND

0600 ON SITE, BRYAN TENDELL ON SITE (GEOSYNTEC).

- LAND AND LAKES CREW CONTINUE TO COMPACT LIFT #4 ON EAST SLOPE OF CELL II. CREW COMPACTING CLAY LINER MATERIAL USING A CAT 825 C AND DOZER D6H DOZER TO ACHEIVE COMPACTION REQUIRMENTS.

DISCUSS COMPACTION REQUIRMENTS WITH H. TOMLINSON (GEOSYNTEC), HE STATES THAT DUE TO CONFORMANCE TEST DATA, GEOSYNTEC FIELD PERSONNEL CONDUCTING DENSITY TEST ON THE CLAY LINER SHOULD USE A PROCTOR OF 122 WITH A MIN. OF 13.2% MOISTURE, COMPACTED TO 97% DRY DENSITY. DISCUSS THIS WITH JOHN PRUSKO, JOHN P. REVIEWING SHELBY TUBE TEST RESULTS (DRAFT) INDICATE THAT AT 95% OF DRY DENSITY THEY SHOULD ACHEIVE A HYDRALIC CONDUCTIVE OF 1×10^{-7} OR LOWER. JOHN PRUSKO TALKED WITH H. TOMLINSON (GEOSYNTEC PROJECT ENG.) AFTER FUTHER REVIEW OF FIELD TEST DATA, GEOSYNTEC FEELS THAT 95% OF 122 DRY DENSITY THE CONTRACTOR SHOULD MEET REQUIRED SPECIFICATIONS.

- GEOSYNTEC CONDUCTING DENSITY TEST #12 ON LIFT #4, TEST MEETS REQUIRMENTS OUTLINED ABOVE AND IN THE C.Q.A PLAN.
- CREW PLACING LIFT #5 ON THE EAST SLOPE, IN A 6" COMPACTED LIFT USING A D6H + D7 DOZER TO SPREAD THE LIFT.
- GEOSYNTEC MONITORING PLACEMENT OF LIFT #5 ON THE EAST SLOPE, ALSO SURVEYORS ON SITE CHECKING THICKNESS OF CLAY LINER MATERIAL ON THE EAST SLOPE. SURVEYORS STATE THAT THERE INFORMATION INDICATE APPROXAMATE 2" OF COMPACTED CLAY LINER IN PLACE AT LIFT #4.

LAND AND LAKES CREW CONTINUE TO PLACE LIFT #5, AND CONTINUE TO ADD MOISTURE TO SLOPE AREA AND EXCAVATED MATERIAL BEING USED IN LIFT #5

COPY TO: Larry Emerson PER: Daniel Williams HRS: _____

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 12 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: —

1620 GEO SYNTEC INFORM CREW THAT ADDITIONAL MOISTURE IS NEED ALONG EAST SLOPE AS THEY CONTINUE TO COMPACT LIFT # 5

1700 LAND AND LAKES CREW STOP WORK, GEO SYNTEC DEPART SITE.

COPY TO: LARRY EMERSON PER: David Wilkin HRS: 11

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 12 day 5 month 1995 year

CONTRACTOR: Land and Lakes Co.

WEATHER: 55 °F, clear with light wind

06:00 Arrive at Land and Lakes Co. 122nd Street Landfill with Mr. David Williams (GeoSyntec Site Manager). Drive with Mr. Williams to Cell III and discuss project details.

Observe soil compaction activities underway along Cell III east slope, lift 4.

GeoSyntec conducts moisture density test #12 on lift number 4.

Shelby tube sample ST #3.

Land and Lakes Co. continues to push soil for fifth lift.

GeoSyntec prepares shelby tube sample for shipment to soils testing lab, (GeoSyntec Atlanta Lab) and arranges Fed-Ex pick-up from site.

Surveyors check compacted clay liner thickness on Cell II East slope.

Surveyors indicate compacted clay liner thickness is approximately 2 ft at lift #4.

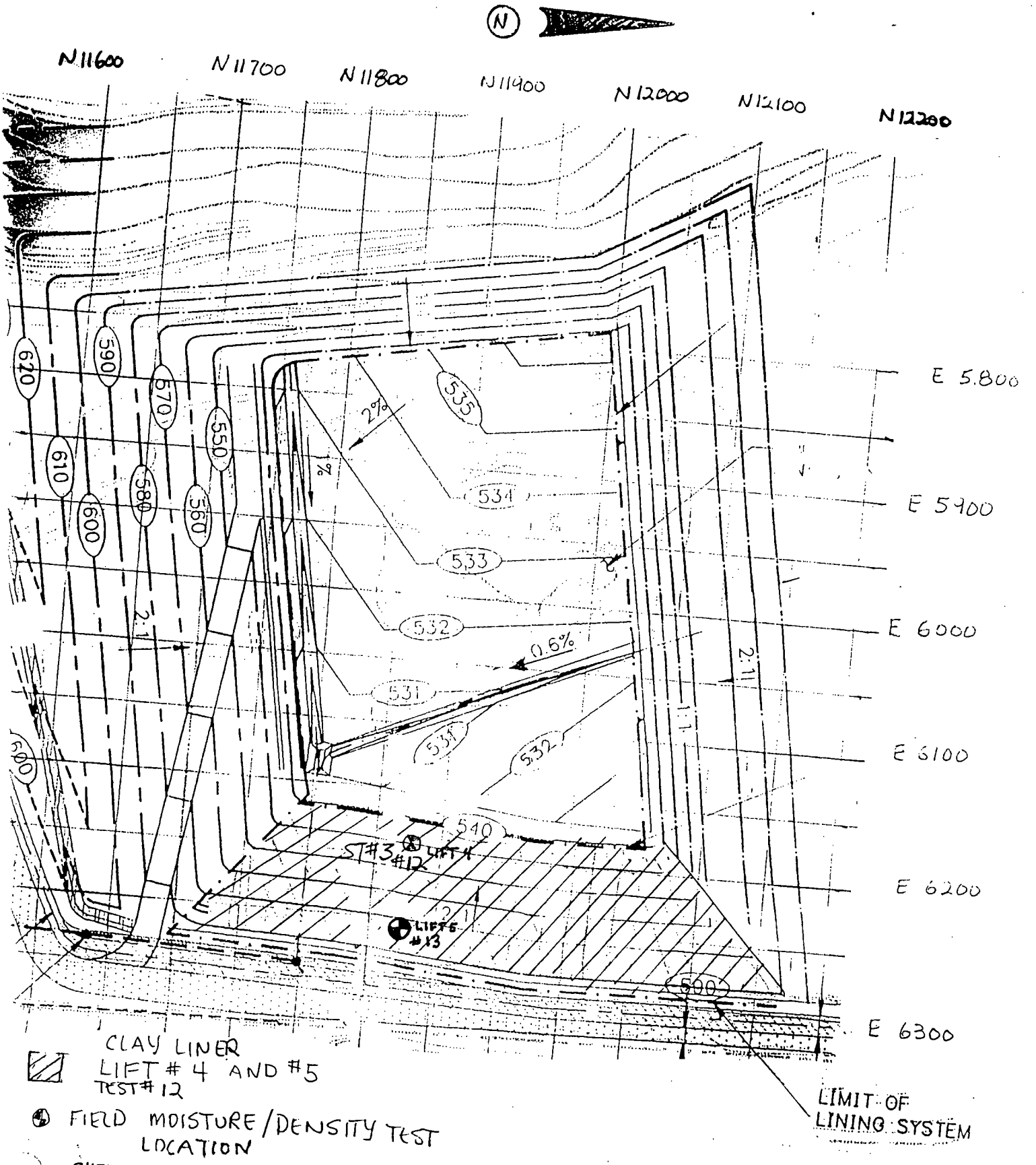
Land and Lakes continues to place lift #5 and to wet the east slope and excavated material used for lift #5

16:30 GeoSyntec informs Land and Lakes crew that additional moisture is needed along east slope as lift #5 is compacted.

17:00 Land and Lakes Crew stop work, GeoSyntec departs site.

COPY TO: Larry Emerson PER: Bryan Tindell HRS: 11

12 MAY


N
N11600
N11700
N11800
N11900
N12000
N12100
N12200
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
590
570
550
610
580
560
600
535
534
533
532
531
540
500
2%
0.6%
2:1
ST#3 #12 LIFT 4
LIFT 5 #13
CLAY LINER
LIFT # 4 AND #5
TEST # 12
FIELD MOISTURE/DENSITY TEST LOCATION
SHELBY TUBE SAMPL # 3 (ST#3)
LIMIT OF LINING SYSTEM

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 13 day 5 month 1995 year

CONTRACTOR: Land and Lakes Company

WEATHER: 53°F, Over cast, Occasional light drizzles turning to rain by 10:00

06:00 Arrive at site. Land and Lakes operators are using a D6H dozer and a CAT 825C sheeps foot compactor to compact the fifth lift of the clay liner placed along the east slope of Cell III. Water has been sprayed over the east slope. Intermittent drizzles add additional moisture to the east slope. GeoSyntec conducts Field Density Tests #14 and #15 on lift 5. Test #14 meets project specifications, but #15 fails due to low PR (compaction). Land and Lakes crew continues compacting lift #5 in the area which failed to meet project specifications and begins placing lift #6 in the area where lift #5 met project specifications.

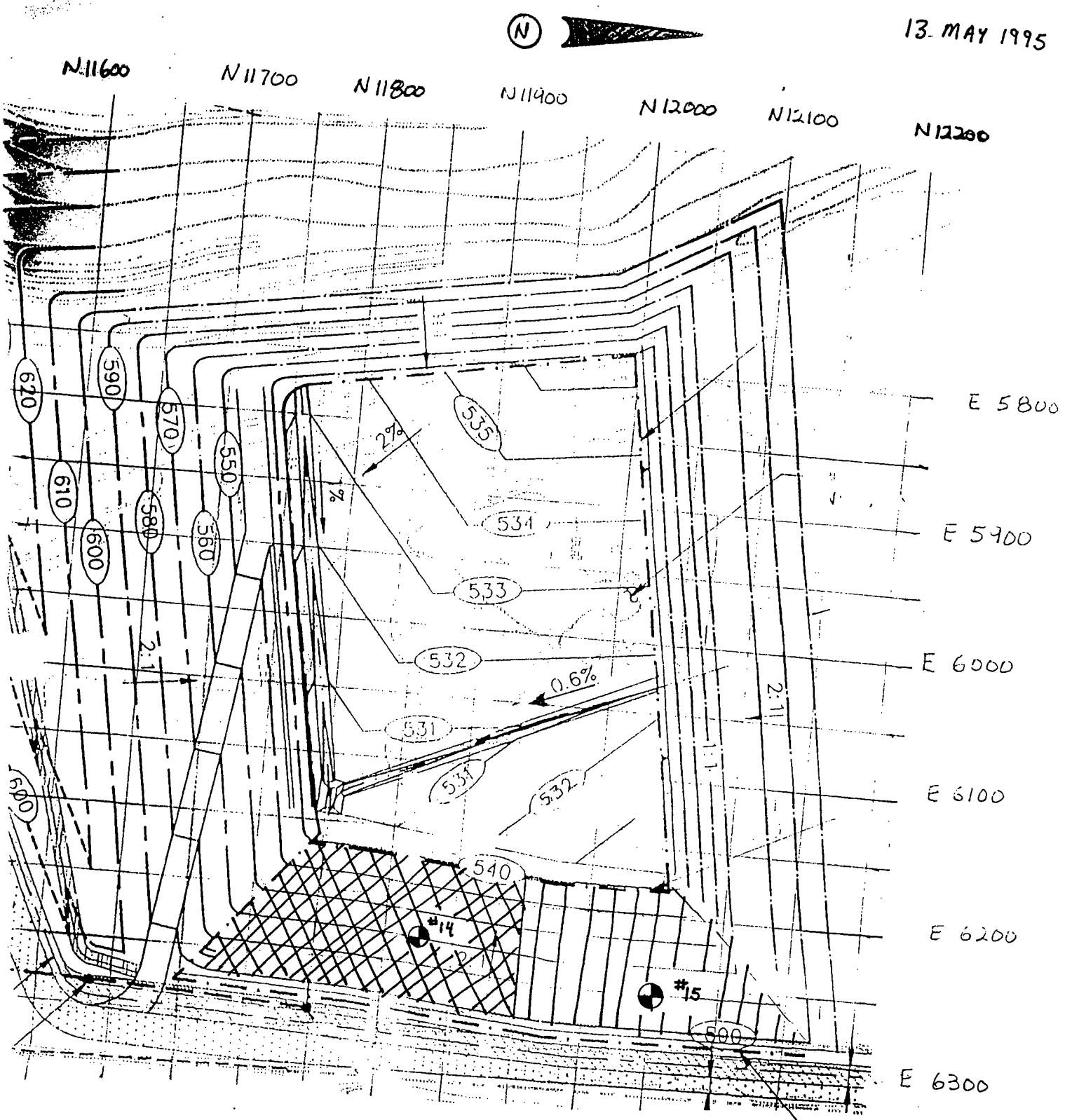
10:00 Rain begins to fall at the site. Land and Lakes crew and GeoSyntec stand-by.

10:30 Rain intensifies. Continued work at Cell III appears unlikely.

11:00 GeoSyntec and Land and Lakes

COPY TO: Larry Emerson PER: Bryan Tindall HRS: 5

13 MAY 1995



LIFT #5 AREA PASSED (LIFT #6 PLACEMENT STARTED)

FIELD DENSITY TEST LOCATION #14 PASSED

LIFT #5 AREA TO BE REWORKED

FIELD DENSITY TEST LOCATION #15

LIMIT OF LINING SYSTEM

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 6

DESCRIPTION: CELL VI DATE: 21 day 5 month 95 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 21 MAY 1995 FOR THE CONSTRUCTION OF CELL VI

COMPACTED CLAY LINER:

- LAND AND LAKES CO. (LALC) CONTINUE TO EXCAVATE NATIVE SOIL FROM THE CELL III FLOOR, STOCKPILE THE NATIVE SOIL, PLACE THE NATIVE SOIL IN 6" THICK COMPACTED LIFTS TO CONSTRUCT THE 3 ft THICK COMPACTED CLAY LINER. THE CONSTUCTION PROCESS INCLUDES THE USE OF THE FOLLOWING EQUIPMENT: 2 CAT 235-C TRACKHOES (EXCAVATE CELL FLOOR), 3 VOLVO A35 DUMP TRUCKS (HAUL THE EXCAVATED SOIL), ONE CAT D6H LGP DOZER AND A CAT D7H (SPREAD THE SOIL IN LIFTS), AND ANE CAT-825C SHEEPS FOOT COMPACTOR (COMPACTS THE 6" CLAY LIFTS TO MEET PROJECT SPECIFICATIONS) AND A CAT 613-B WATER WAGON (SPRAYS WATER OVER SOIL TO MAINTAIN APPROPRIATE MOISTURE CONTENT). GEOSYNTEC PERFORMED CQA DURING SOIL WORK INCLUDING PERFORMING NUCLEAR FIELD DENSITY TESTS WITH A TROXLER 3255 NUCLEAR GUAGE AND COLLECTING SHELBY TUBE SAMPLES.

TOTALS

AREA OF SOIL EXCAVATION N 11800 E 6200 N 12050 E 6200
N 11800 E 6000 N 12050 E 6000

AREA OF COMPACTED CLAY LINER INSTALLED
N 11950 E 6300 N 12150 E 6300
N 11950 E 6200 N 12050 E 6200 and
N 11800 E 6200 N 12050 E 6200
N 11800 E 6000 N 12050 E 6000

NUMBER OF FIELD DENSITY TESTS: 19 PASSED 15 FAILED 4

NUMBER OF SHELBY TUBES COLLECTED: 4

COPY TO: LARRY EMERSON PER: Bryan Tindell

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 15 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES COMPANY

WEATHER: 58 °F, CLEAR, LIGHT WINDS

06:00 Arrive at Land and Lakes Co. (LALC) 122nd street Landfill. Observe that Land and Lakes Crew continues to work in Cell VI; excavation continues on cell floor, and ~~compaction~~ (RT) soil placement and compaction continues along east slope. Two CAT 235-C track hoes are used to excavate the cell floor soils and load the soil into dump trucks. Three Volvo A35 dump trucks haul the soil to the top of the east slope where the soil is dumped. A CAT D6H LGP ~~bo~~ dozer and a CAT D7H spread the soil over the east slope to form the sixth lift. A CAT-825C sheeps foot compactor is used to compact the sixth lift. The moisture content of the soil is maintained by intermittently spraying water over it using a CAT G13-B water wagon. GeoSyntec retests lift 5 (Field Density Test #16) in the area which not not meet project specifications on 13 May 1995. The re-test met project specifications and Land and Lakes begins placing lift 6 over the area.

11:00 Dr. Neil Williams (GeoSyntec) McEileen Sheliga and Mr. James Cowhey Jr. arrive at Cell VI and observe construction operations.

11:30 Dr. Williams, Ms. Sheliga, and Mr. Cowhey Jr. leave cell VI.

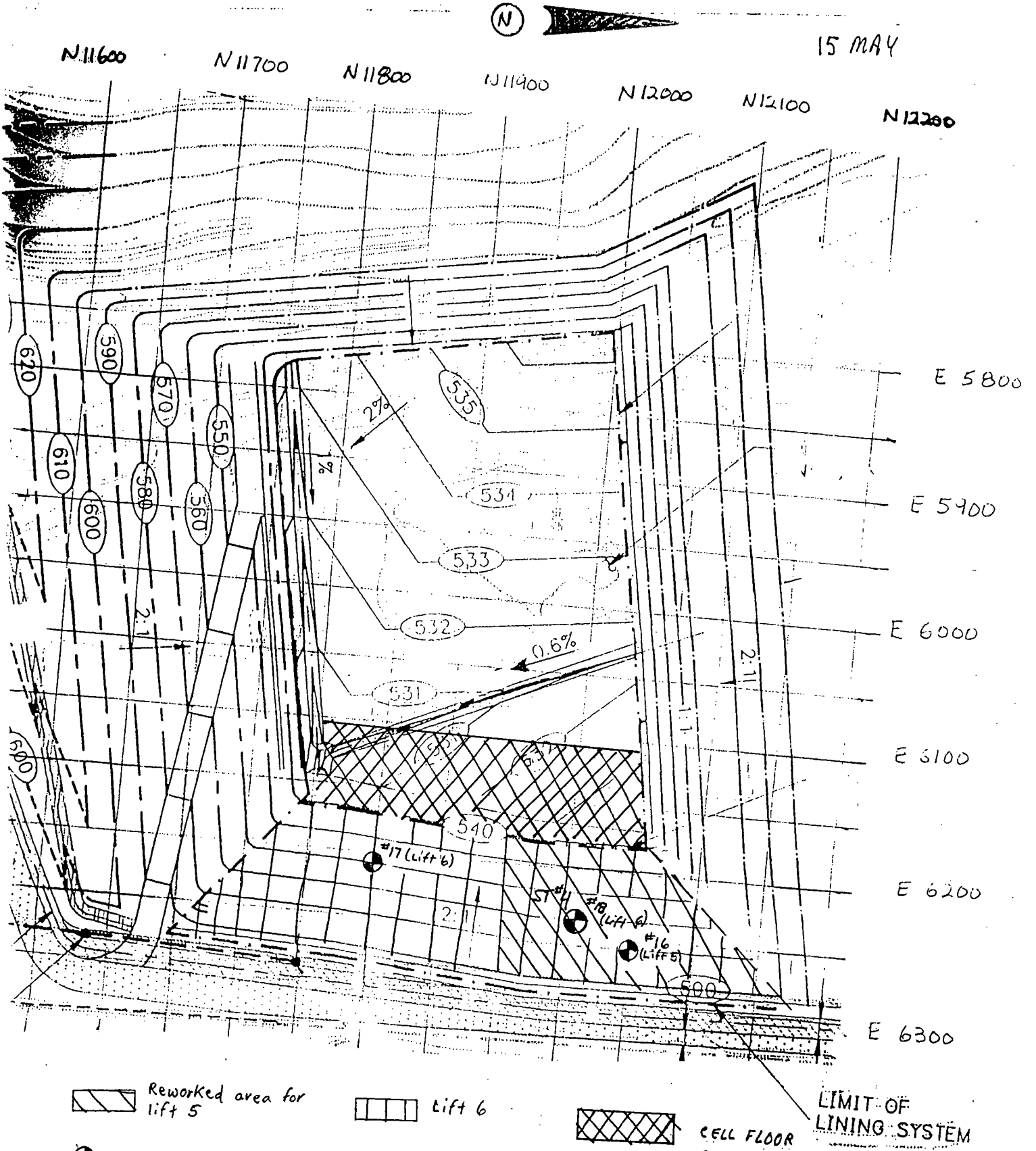
14:00 GeoSyntec performs Field density tests #17 and #18 on lift 6. Both tests meet project specifications. Shelby tube sample ST #4 is collected at #18 location. GeoSyntec observes good layer bonding in the hole cut to extract the shelby tube sample. Shelby tube ST #4 is prepared for delivery to GeoSyntec Soils lab (Georgia). Land and Lakes Crew continue working on cell floor.

16:30 Land and Lakes continues earthwork activities along slope toe and cell floor, GeoSyntec takes shelby tube samples to Fed-Ex, for shipment.

Note: LSCI Land Surveyors surveyed Cell VI east slope and floor adjacent to slope to (slope toe to ~~100' west~~ approximately 100' west of slope toe.

17:30 shelby tube sample is Fed-Ex'd to Georgia Lab. GeoSyntec off-clock.

COPY TO: LARRY EMERSON PER: Bryan Tisdell HRS: 11.0


N
N11600
N11700
N11800
N11900
N12000
N12100
N12200
15 MAY
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
590
570
550
610
580
560
600
535
531
533
532
531
540
500
600
2%
1%
0.6%
2:1
1:1
#17 (Lift 6)
ST #4
#18 (Lift 6)
#16 (Lift 5)
Reworked area for lift 5
Lift 6
LIMIT OF LINING SYSTEM
FIELD DENSITY TEST LOCATION #16
FIELD DENSITY TEST LOCATIONS #17 and #18 (SHELBY TUBE SAMPLE ST #4 COLLECTED AT #18)
CELL FLOOR CUT 3' UNDER GRADE AND PREPARED FOR FIRST COMPACTED CLAY LINER LIFT

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 16 day 5 month 1995 year

CONTRACTOR: Land and Lakes Company

WEATHER: 58°F, overcast, moderate winds, occasional drizzle

06:00 Arrive at Cell VI. Land and Lakes crew (LALC) resumes fine grading the east slope with a D6 and D7 dozer. Excavation resumes on the cell floor. Two CAT 235-C (track hoes) are used to excavate the cell floor along 6050 E line. The soils ~~are~~ is cut to 3 ft below final grade and ~~are~~ is hauled to a stock pile on the west side of the cell floor using three Volvo A-35 (dump trucks).

Discuss project status and details with Mr. Harry Tomlinson (GeoSyntec P.E.) via telephone. Mr. Tomlinson requests a second ~~test~~ Field Density at location of Field Density Test #17. ~~Because no shelby tube was taken at this location, inspite of moisture content of % and~~

GeoSyntec performs field density test #19 at same location as field density test #17. Test #19 is performed following fine grading of east slope, and as a result the compaction is observed to have increased from 95.4 % to 99.4 % compaction

13:00 LALC places lift 1 on the base of Cell VII from the east slope toe aproximately E 6065 line. A CAT D7 dozer is used spread the soil and a CAT 825 sheepsfoot compactor is used to compact the soil.

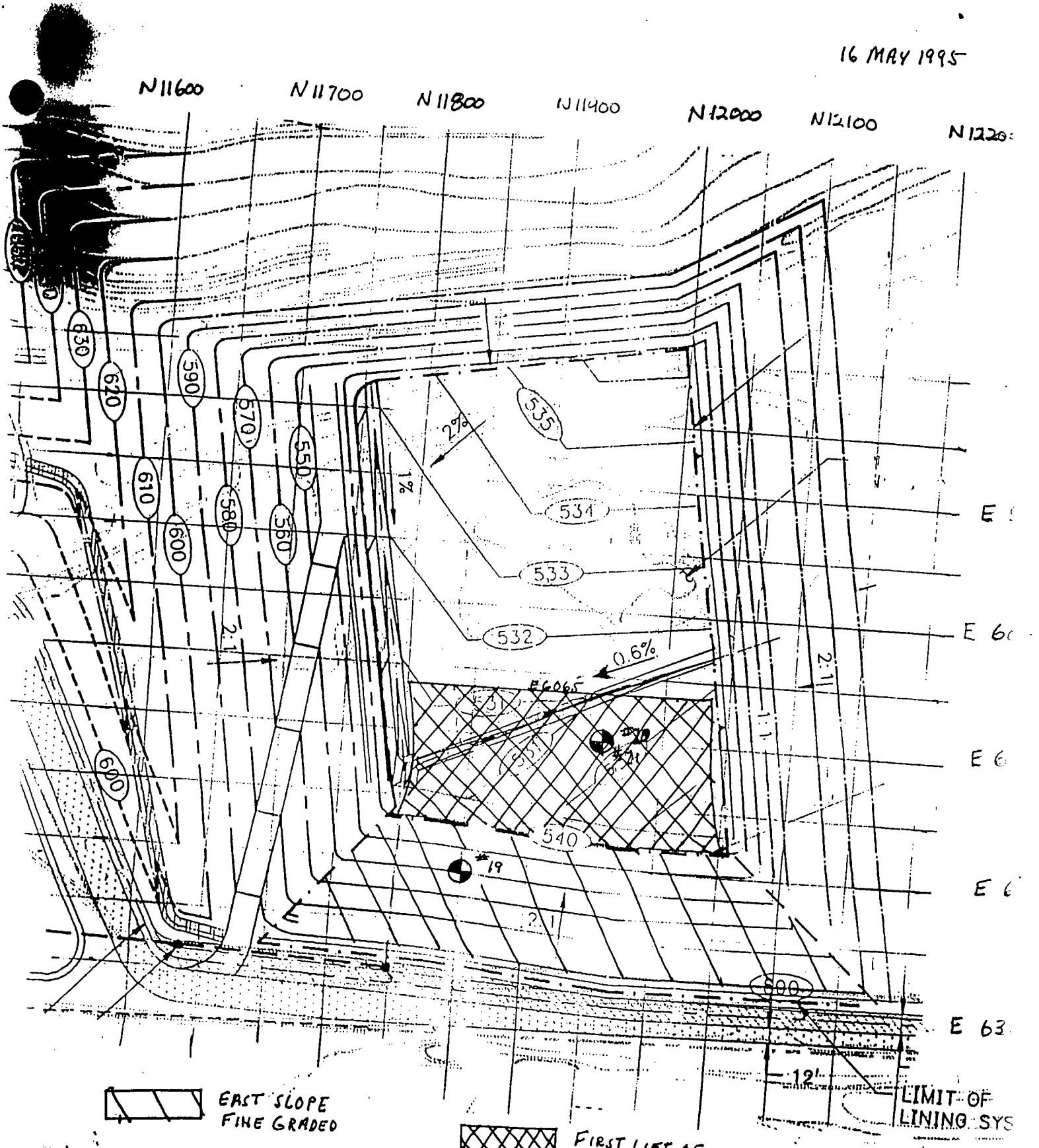
Mr. Larry Emerson is at the site. Discuss the project status and scheduling with Mr. Emerson. Serrot (geosynthetics installer) is expected to be at the site late this week or early next week.

15:00 GeoSyntec perform field density test # 20 on first lift. Test #20 does not meet project requirements (low moisture content). LALC adds water to the soil and reworks the soil. GeoSyntec performs field density test # 21 which meets project specifications. LALC begins placing lift 2 above lift 1.

17:00 LALC and GeoSyntec stop work for the day and leave the site.

COPY TO: Larry Emerson PER: Bryan Tisdell HRS: 11.0

16 MAY 1995



EAST SLOPE FINE GRADED

#19 FIELD DENSITY TEST PERFORMED AFTER FINE GRADING LIFT 6 OF EAST SLOPE

FIRST LIFT OF CELL BASE CONSTRUCTED

FIELD DENSITY TEST #20 DOES NOT MEET PROJECT SPECIFICATIONS. AREA IS REWORKED AND RETESTED BY #21 WHICH MEETS PROJECT SPECIFICATIONS.

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 17 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES COMPANY

WEATHER: 54°F, OVERCAST, MODERATE WINDS, LIGHT INTERMITTENT MORNING DRIZZLES

06:00 ARRIVE AT CELL VI. LAND and LAKES crew (LALC) are spreading lift 2 on the cell base using a D7 dozer and compacting it with a C-825 sheepsfoot compactor. Excavation of the cell base continues west of the area where lift 2 is being placed. GeoSyntec performs Field density test 22 on the second lift. Test 22 meets project specifications, and GeoSyntec collects Shelby Tube sample ST #5 at this location. Following shelby tube collection LALC begins constructing lift 3. Geosyntec prepares shelby tubes for shipment.

10:30 GeoSyntec conducts field density test #23 on lift 3. Test #23 meets project specifications. LALC begins constructing lift 4.

Fax Mr. Harry Tomlinson (GeoSyntec Project Engineer) Field Daily Report and Field Density Test Log from 16 May 1995. Telephone Mr. Tomlinson and discuss project status.

GeoSyntec collects a grab sample PCL # 3. PCL # 3 is Fed-Ex'd to GeoSyntec's soils testing lab for sieve and proctor testing.

14:00 LALC has completed lift 4. GeoSyntec conducts field density test #24 on lift 4, which meets project requirements. Shelby tube sample ST #6 is taken from lift 4 and prepared for shipment to the soils lab. LALC begins constructing lift 5.

16:15 GeoSyntec conducts field density test 25 on lift 5 which meets project requirements. LALC prepares lift 5 and general work area of cell VI for stopping work for the day (i.e. overnight rain is forecast so soil surfaces are bladed smooth.

17:00 LALC stops work for the day. GeoSyntec departs site to Fed-Ex shelby tube sample ST #6.

17:30 ST #6 is Fed-Ex'd to GeoSyntec's soils testing lab in Georgia.

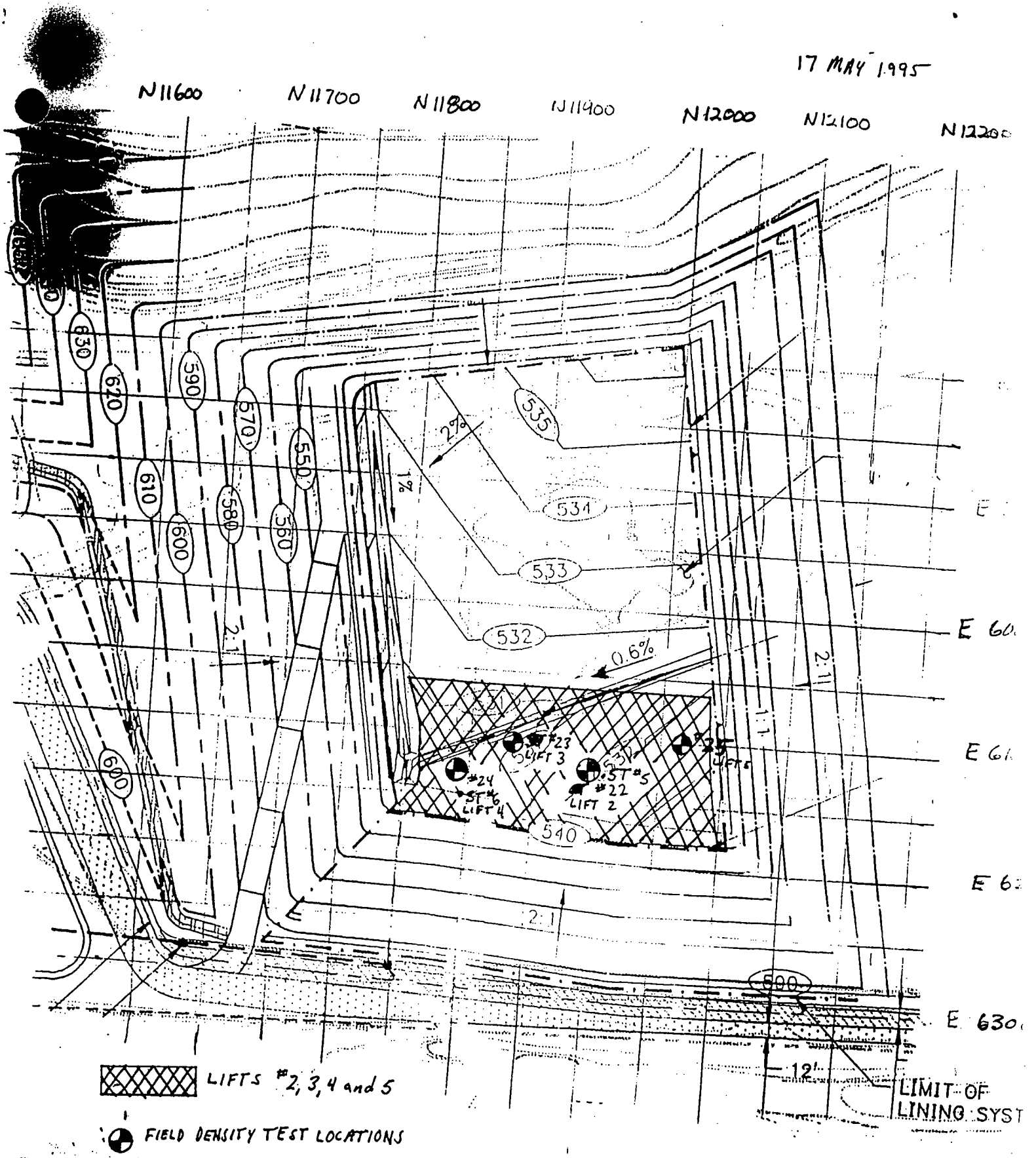
Note: Lifts 2-5 were placed today in the area from lines N 11800 to N 12040 and E6065 to E 6175.

Area = approximately 26,400 ft^2 = 0.6 acre

Lifts 2-5 = 1,955 yds^3 Placed today.

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: 11

17 MAY 1995



LIFTS #2, 3, 4 and 5

FIELD DENSITY TEST LOCATIONS

- SHELBY TUBE SAMPLES TAKEN FROM :
  ST #5 from LIFT 2 AT FIELD DENSITY LOCATION #22
  ST # 6 from LIFT 4 AT FIELD DENSITY LOCATION #24

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 18 day 5 month 1995 year

CONTRACTOR: Land and Lakes Company

WEATHER: 50°F, overcast, moderate winds, light morning drizzle

06:00 Arrive at Cell VI. Land and Lakes crew (LALC) resumes soil excavation and clay liner construction at the base of Cell VI. Currently LALC is using a CAT 235-C (track hoe) to excavate soils between N 11800 to N 12000 and E 6000 to E 6025. A portion of the excavated soil is placed into one of three VOLVO A35 (dump trucks) which dump the soil above the fifth lift constructed yesterday (17 May 1995). The excess soil is hauled out of Cell VI. The soil ~~dumped~~ (or) placed above the fifth lift constructed yesterday is spread and rough graded with a CAT D7H (D7 dozer) and compacted with a CAT 825-C (compactor). The sixth lift is constructed from N 11800 to N 12040 and E 6065 to E 6075. A CAT-613-B (water wagon) is used to add moisture to the soil during construction.

08:30 Steady light rain falls during compaction of lift 6. GeoSyntec conducts field density test on lift 6 – the test meets project requirements. LALC begins constructing lift 1 between E6000 to E6065 and N 11825 to N 12000.

11:45 LALC stops earthwork at Cell VI due to intensifying rain and wet ground conditions. GeoSyntec reviews CQA documentation and project specifications, and performs maintenance on Troxler 3430 Nuclear Guage including battery change and minor adjustments.

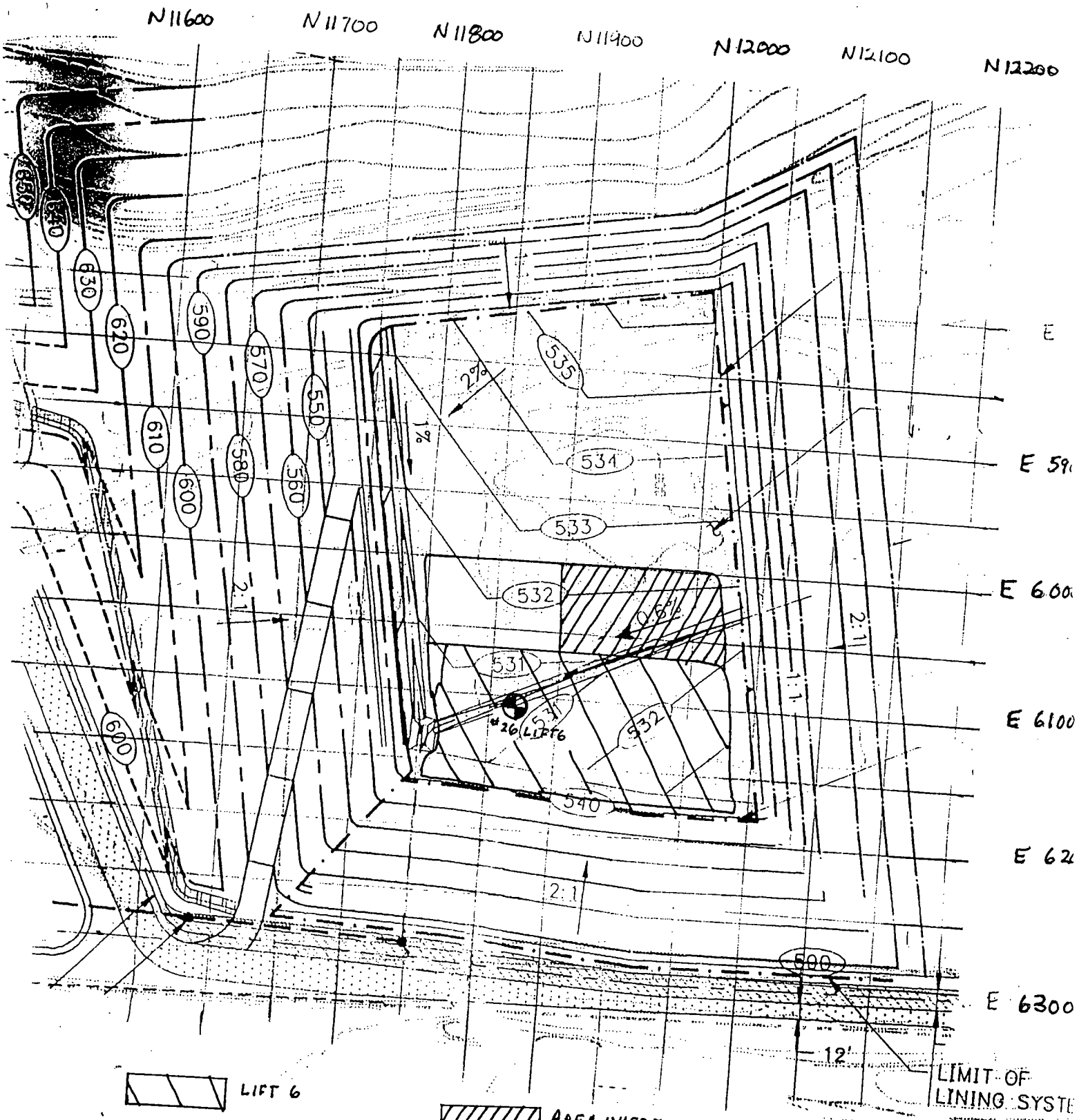
Contact Mr. Harry Tomlinson via telephone to discuss project status and scheduling details: Serrot schedule to arrive at site on Monday (May 22, 1995), geosynthetics shipments expected to arrive at site between Friday and Monday (19-22 May 1995), and geosynthetics installation expected to begin on Tuesday (23 May 1995). Quality Control Certifications (QC Certs) for the material have not arrived yet.

15:00 No additional work has been performed at Cell VI since work stopped at 11:45. GeoSyntec is informed that no further work will be performed at Cell VI today due to wet conditions.

15:30 GeoSyntec leaves site.

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: 9.5

18 MAY 1995


N11600
N11700
N11800
N11900
N12000
N12100
N12200
E
E 590
E 600
E 6100
E 62
E 6300
650
640
630
620
610
600
590
580
570
560
550
540
535
534
533
532
531
2%
1%
2:1
1:1
#26 LIFT 6
12'
LIMIT OF
LINING SYSTE
LIFT 6
AREA WHERE SOIL
WAS SPREAD FOR LIFT 1
(LIFT 1 WAS NOT COMPLETED
DUE TO RAIN STOPPING WORK)
FIELD DENSITY TEST
#6 MEET PROJECT REQUIREMENTS

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 19 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES COMPANY (LALC)

WEATHER: 60°F, Clear, Light Winds

06:00 Arrive at Cell VI. Observe Land and Lakes crew (LALC) is excavating base of Cell VI with one CAT 235-C (track hoe). Excavated soils are hauled out of Cell VI with three VOLVO A 35 (dump trucks). No other earthwork is currently underway. Subbase is wet with several puddles ahead (south) of the soil which was being spread yesterday (18 May 1995) for lift 1. Track hoe is excavating soil between N 11800 to N 12150 and E 5975 to E 6000.

09:00 LSCI Land Surveyor arrive at Cell VI and perform survey of cell VI base to verify compacted clay liner and subbase grades.
Meet with Mr. John Prusko (LALC construction manager) who state that excavation at Cell VI will ~~continue~~ continue in order to provide room for the first lift to be placed.
Contact Mr. Harry Tomlinson via telephone to report project status, also request (i) six shelby tubes be delivered to site, (ii) east slope anchor trench detail (iii) inform Mr. Tomlinson that LALC requests advice on technique to use for smooth drum rolling the east slope (2V:1H).

12:30 LALC resumes Lift 1 construction at Cell VI base in addition to continuing excavation operations. LALC has obtained a _____ (smooth drum roller) and attempts to use the smooth drum roller on the east side slope. The roller is only able to climb approximately 50' up the slope. LALC attempts to make passes from the top of the slope going down, however, the roller skids. Mr. Tomlinson is contacted for advice; Mr. Tomlinson advises using appropriate cable and winch apparatus attached to the smooth drum roller to pull the roller up the slope. Mr. Tomlinson attempts to contact Larry Emerson (LALC) to discuss the matter. Meanwhile LALC determines that it will try using the drag line equipment on site. Mr. Tomlinson is informed of this by John Prusko (LALC)

14:00 GeoSyntec calls Michael Brown (SERROT submittals cordinator) and requests QC certs for geosynthetics.

16:50 LALC completes compaction of lift 1. GeoSyntec conducts field

COPY TO: LARRY EMERSON PER: Mayan Tindell HRS: 11

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 19 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES COMPANY

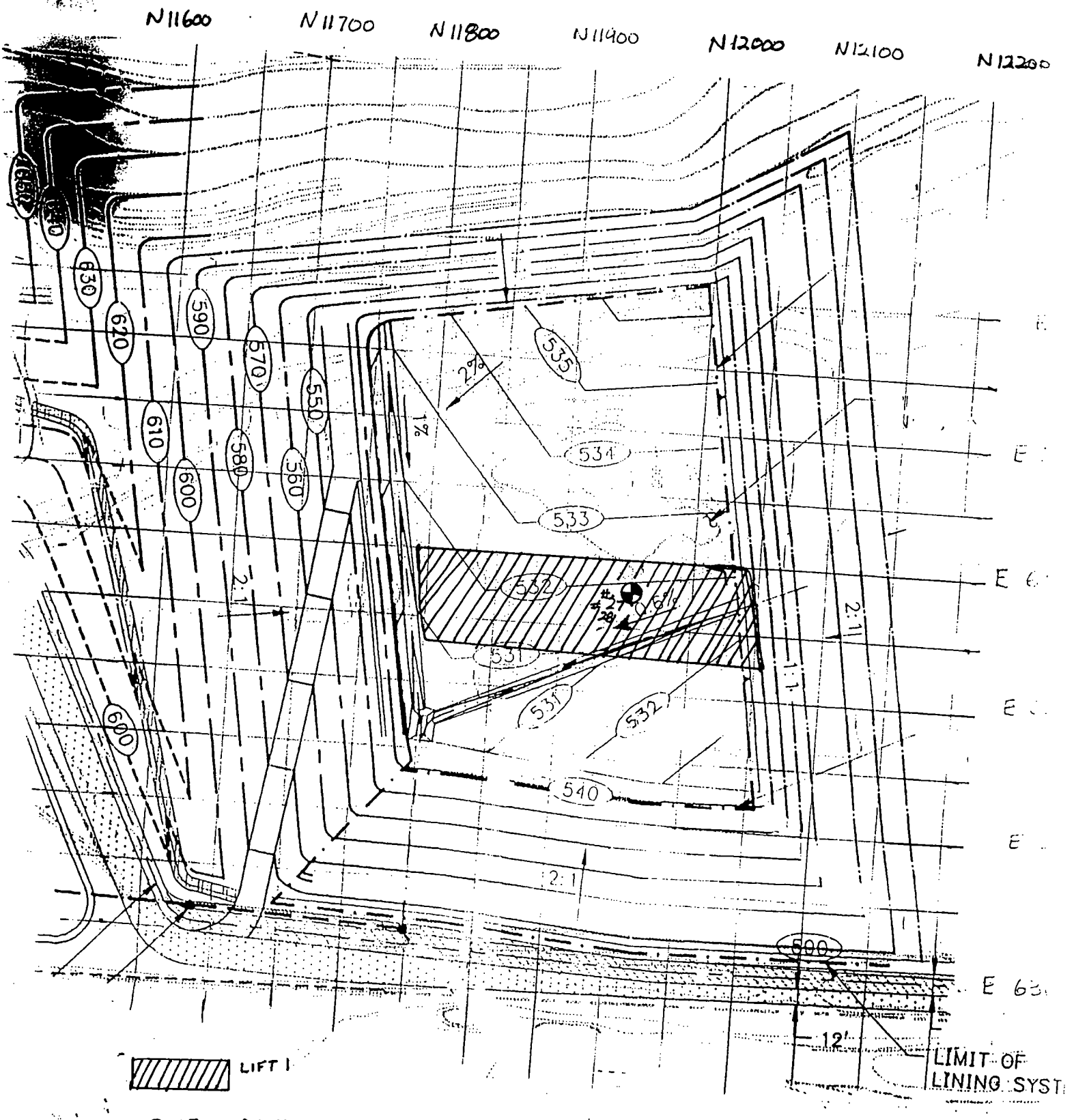
WEATHER: 60°F, clear, light winds

16:50 (continued) density test ~~with~~ RB # 27; which fails to meet project requirement. LALC reworks lift 1 - GeoSyntec retests lift 1 (field density test #28). Lift 1 meets project specifications. LALC prepares cell VI for stopping work for the day

17:00 GeoSyntec and LALC leave site for the day.

COPY TO: LARRY EMESON PER: Bryan Tindall HRS: 11

19 MAY 1995



● FIELD DENSITY TEST LOCATION
27 FAILED
28 (RETEST) PASSED

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 20 day 5 month 1995 year

CONTRACTOR: LAND and LAKES COMPANY

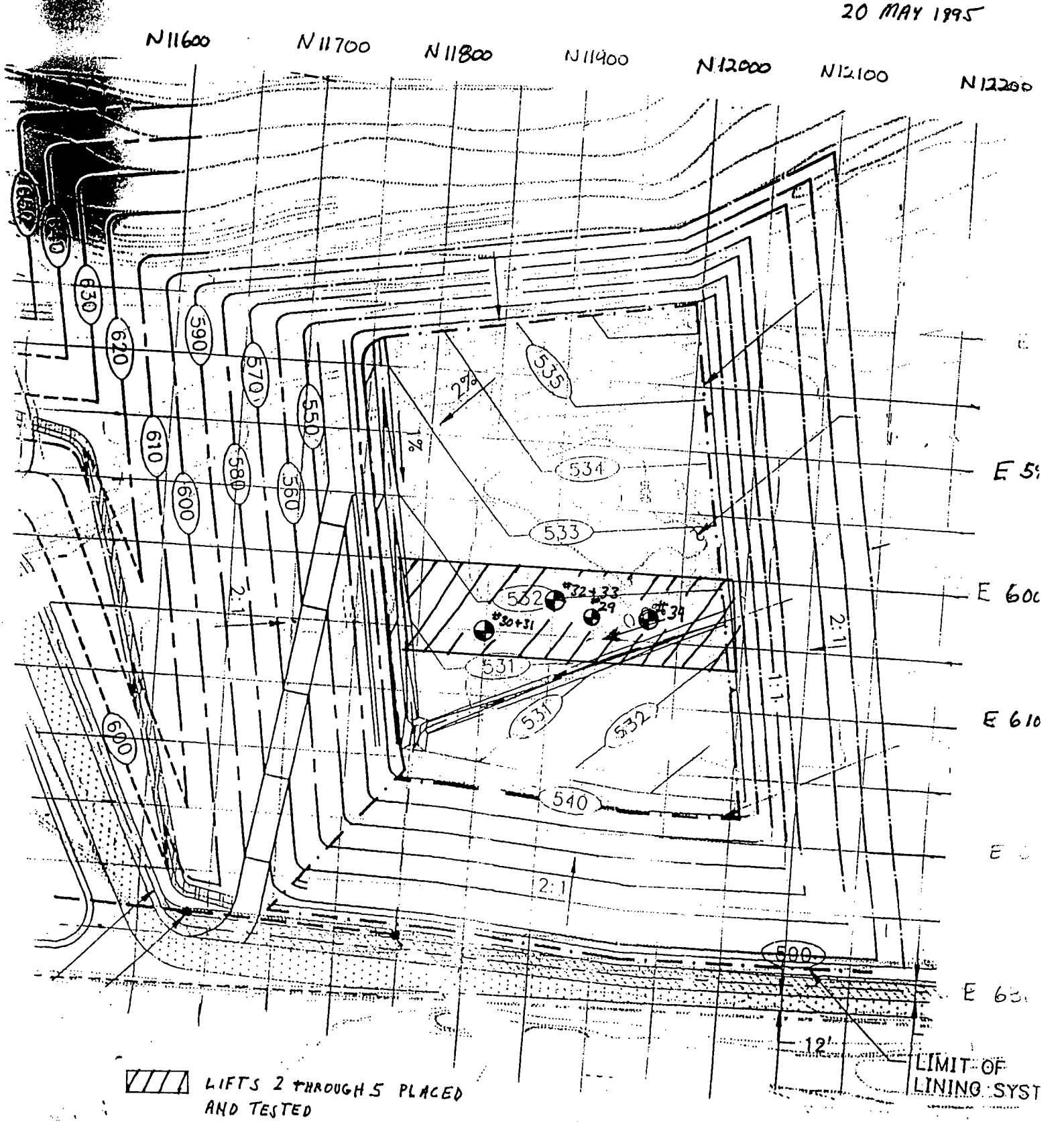
WEATHER: 60°F, partly cloudy, moderate winds

06:30 Arrive at Cell VI. Land and Lakes Crew ~~con~~ resumes construction of compacted clay liner at the base of Cell VI between N 11800 E 5995 and N 11800 E 6000 N 11850 E 5975 and N 11850 E 6000. Soils used to construct the compacted clay liner are excavated from the base of Cell VI and placed and compacted as describe in 19 May 1995 daily field report. Lifts 2 through 5 are constructed and meet project specifications. LALC has attempted to use a smooth drum roller to smooth the surface of the east slope. However, the attempt was unsuccessful due to the steepness of the slope. GeoSyntec and Land and Lakes discuss alternatives. GeoSyntec states that the slope must be smooth prior to geosynthetics installation. Land and Lakes arranges to tether the smooth drum roller to a drag line crane available at the site. The drag line will be attached to the smooth drum roller and the crane will pull the smooth drum roller up and down the slope using the crane winch.

13:30 LALC stops work at the base of Cell VI, and GeoSyntec departs site.

COPY TO: LARRY Emerson PER: Bryan Tindell HRS:

20 MAY 1995


N11600
N11700
N11800
N11900
N12000
N12100
N12200
630
620
590
570
550
610
580
560
600
535
2%
1%
534
533
532
#32+33
#29
#30+31
#39
531
531
532
540
2:1
2:1
1:1
2:1
500
12'
LIMIT OF
LINING SYST
LIFTS 2 THROUGH 5 PLACED AND TESTED
#30 FIELD DENSITY TEST LOCATION

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 6

DESCRIPTION: CELL VI DATE: 28 day 5 month 95 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 28 MAY 1995 FOR THE CONSTRUCTION OF CELL VI

COMPACTED CLAY LINER:

- LAND AND LAKES CO. (LALC) CONTINUE TO EXCAVATE NATIVE SOIL FROM THE CELL III FLOOR, STOCKPILE THE NATIVE SOIL, PLACE THE NATIVE SOIL IN 6" THICK COMPACTED LIFTS TO CONSTRUCT THE 3 ft THICK COMPACTED CLAY LINER. THE CONSTUCTION PROCESS INCLUDES THE USE OF THE FOLLOWING EQUIPMENT: 2 CAT 235-C TRACKHOES (EXCAVATE CELL FLOOR), 3 VOLVO A35 DUMP TRUCKS (HAUL THE EXCAVATED SOIL), ONE CAT D6H LGP DOZER AND A CAT D7H (SPREAD THE SOIL IN LIFTS), AND ANE CAT-825C SHEEPS FOOT COMPACTOR (COMPACTS THE 6" CLAY LIFTS TO MEET PROJECT SPECIFICATIONS) AND A CAT 613-B WATER WAGON (SPRAYS WATER OVER SOIL TO MAINTAIN APPROPRIATE MOISTURE CONTENT). GEOSYNTEC PERFORMER CQA DURING SOIL WORK INCLUDING PERFORMING NUCLEAR FIELD DENSITY TESTS WITH A TROXLER 3255 NUCLEAR GURGE AND COLLECTING SHELBY TURE SAMPLES.

TOTALS

AREA OF SOIL EXCAVATION N11800 E 6080 N 12050 E 6000
N11800 E 5925 N 11800 E 5925

AREA OF COMPACTED CLAY LINER INSTALLED
N 11800 E 6000 N 12050 E 6000
N. 11800 E. 5925 N 12050 E 5925

NUMBER OF FIELD DENSITY TESTS: 7 PASSED 7 FAILED 0

NUMBER OF SHELBY TUBES COLLECTED: 1

SERROT (Geosynthetics installer) arrives at site and prepares to begin installation. Geosynthetic materials arrive on site. Geosyntec collects conformance samples. see Material Inventory Logs for details.

COPY TO: LARRY EMERSON PER: Bryan Tindell

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 22 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 60°F, partly cloudy, moderate winds.

06:00 Arrive at site with Ms. Harriet Lyons (GeoSyntec). Ms. Lyons is at the site to perform CQA for the installation of the geosynthic components of the Cell VI lining system. Several truck loads of geosynthetics are on site. Land and Lakes Crew (LALC) are working at the base of Cell VI. LALC is currently removing an area of soil, from the barrow source, that contains a sand seam. GeoSyntec monitors the excavation and removal of the soils containing sand. The soil is excavated with a CAT 235-C (track hoe) and hauled out of Cell VI with three VOLVO A35 (dump trucks). LALC also adds moisture to and reworks lift 5 - constructed 20 May 1995. Water is add with a CAT-613-B (water truck) and the soil is worked with a CAT D6 (dozer) and CAT-825C compactor. GeoSyntec conducts field density test 35 on lift 5 - test 35 meets project requirements. LALC begins constructing lift 6. Note: Soil containing sand seam was removed from between approximately N 11800 E 5975 and N 11850 E 5975 N 11800 E 6000 N 11850 E 6000.

Lift 6 is constructed from soil excavated between approximately N 11900 E 5925 N 11900 E 5950 and N 12000 E 5925 N 12000 E 5950.

07:00 Serrot (geosynthetics installer) arrives at site and begins unloading geosynthetic materials from delivery trucks. Geosynthetics are stockpiled immediately east of Cell VI. GeoSyntec begins material inventory. LALC completes construction of lift six between N 11800 E 6000 and N 12050 E 6000 N 11800 E 6065 and N 12050 E 6065, GeoSyntec performs field density test and collects shelby tube sample ST #4. LALC begins smooth drum rolling the east slope with a _____ smooth drum roller. The smooth drum roller is tethered to a _____ drag line (crane). The crane is located atop the east slope and ~~and~~ The crane pulls the smooth drum roller up and down the east slope. Mr. Larry Emerson is present at site on observes operations at Cell VI.

Serrot crew fills sand bags and prepares equipment for geosynthetics installation.

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: _____

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 22 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES COMPANY

WEATHER: 60°F, partly cloudy, moderate winds

17:00 LALC completes smooth drum rolling the entire east slope. GeoSyntec completes the inventory of geosynthetics that arrived at site today (see Material Inventory and conformance Test Logs for details):

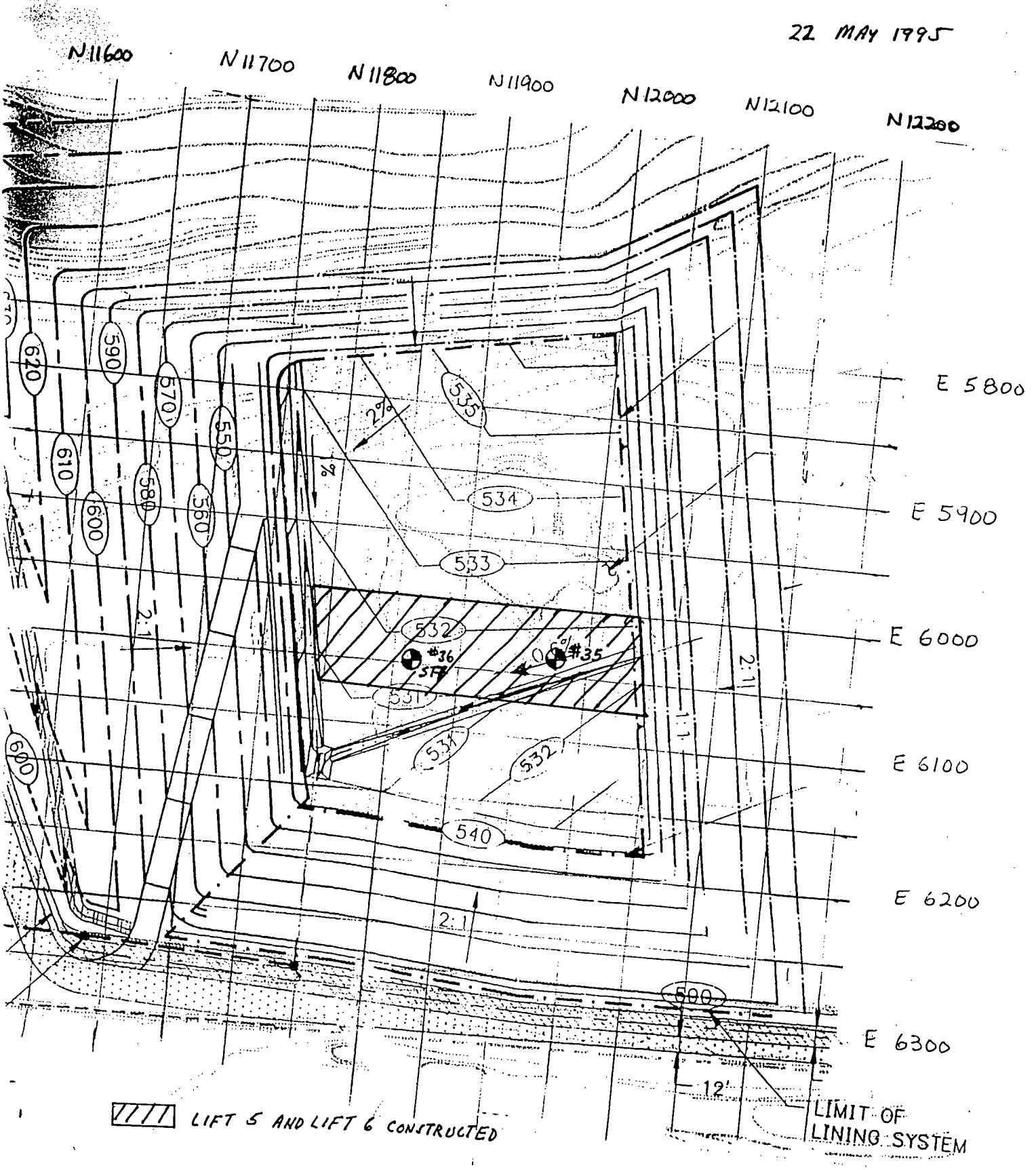
GeoSynthetics on site to date:

Geonet	117,600 ft²
Geotextile	148,500 ft²
Smooth Geomembrane	122,705 ft²
Textured Geomembrane	[redacted]0
Geocomposite	53,550 ft

17:30 GeoSyntec prepares shelby tube sample ST #7 for shipment to soils testing lab.

18:20 ST #7 delivered to Fed-Ex office for priority overnight delivery to GeoSyntec Soils Testing Lab in Georgia.

COPY TO: LARRY EMERSON PER: Bryan Tinkel HRS: 11


22 MAY 1995
N11600
N11700
N11800
N11900
N12000
N12100
N12200
E 5800
E 5900
E 6000
E 6100
E 6200
E 6300
620
590
570
550
610
580
560
600
535
534
533
532
531
540
500
2%
2:1
1:1
#36
ST#
#35
12'
LIMIT OF LINING SYSTEM
LIFT 5 AND LIFT 6 CONSTRUCTED
#36 FIELD DENSITY TEST LOCATION
ST# SHELBY TUBE SAMPE LOCATION

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

Monday

PROJECT: LAND AND LAKES CO. - 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 22 day 05 month 1995 year

CONTRACTOR: Serrot

WEATHER: Sky: Partly Cloudy WIND: Light

0600 Arrive on site:
Take Tour of site with Brian Tindell GeoSynTec Personel.

0700 Serrot Arrives on site.

Note: Serrot unloads smooth Geomembrane, GeoTextile, GeoComposit, Geonet.

Note: GeoSynTec does inventory logs on above named items.

1100 Go over spec Book.

1200 Prepare Log Book For Installation of above named items.

Note: Serrot Fills sand Bags.
No Deployment of Liner This Date.
Serrot Leaves Site.

1700 GeoSynTec Leaves Site.

COPY TO: L.A.L.C. 122nd Street & GeoSynTec PER: Harriet L. Lyon HRS: 11.0

©GEO SYNTEC CONSULTANTS FILE NO. 1-04-DFR SHEET NO. 1 OF 1

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 23 day 5 month 1995 year

CONTRACTOR: LAND AND LAKES Company

WEATHER: 64°F, Overcast, Continuous RAIN

07:00 Arrive at Cell VI with Ms. Harriet Lyon (GeoSyntec) under light rain. Land and Lakes crew is cutting the compacted clay liner at the base of Cell VI to final grades with a CAT D6 (dozer). LALC is also cutting back the access road located along the north side of Cell VI with a CAT 235-C track hoe.
Serrot (geosynthetics installer) is on site unloading a shipment of 60 mil thick textured HDPE geomembrane. GeoSyntec inventories the geosynthetics and obtains a conformance sample from the textured geomembrane. Rain prevents geosynthetics installation today.

08:30 Serrot leaves site. GeoSyntec continues updating CQA documentation.

09:30 Ms. Lyon completes her CQA work for the day and leaves site. One textured geomembrane conformance sample is Federal Expressed (priority overnight delivery) to GeoSyntec's Materials testing lab in Florida.

Total GeoSynthetics delivered to site today:
Textured Geomembrane: 56,350 ft²

12:45 Call GeoSyntec Soils testing lab and speak to Barry Sigmon who indicated that preliminary hydraulic conductivity test results for shelby tube samples ST #5 and ST #6 indicate the samples will meet project specifications. Mr. Sigmon also mentioned that preliminary test results for CCL-3 and CCL-4 indicate that those samples will meet project specifications.

13:00 Speak with Mr. John Prusko regarding certification of compacted clay liner thickness. Mr. Prusk states that he will have the surveyor provide a table showing ~~Coordina~~ cordinates with elevations of Cell VI subbase elevations and compacted clay liner elevations.

13:30 GeoSyntec leaves site for the day (rain continues).

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: 6.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Tuesday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 23 day August month 1995 year

CONTRACTOR: Serrot

WEATHER: Sky: Overcast/Rain Wind: Light Temp.

0700 Arrive on site.

0700 Serrot arrives on site.

0710 Inventory remainder of Geo Textile

0715 Serrot unloads Textured Geomembrane.

Inventory above named Geomembrane.

0830 Serrot leaves site due to rain

0930 Leave site.

COPY TO: L.A.L.C. 122nd St. & GeoSyntec PER: Harriet L. Lyn HRS: 2.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 24 day 5 month 1995 year

CONTRACTOR: Land and Lakes

WEATHER: 55°F, overcast, continuous RAIN

09:00 Arrive at site. Cell VI has ponded water throughout low areas of the cell base due to rain. Land and Lakes crew (LALC) is setting up pumps to pump water from the cell into the leachate storage pond located south of cell VI. LALC is unable to perform earthwork in cell VI due to wet conditions. GeoSyntec reviews CQA documents and contacts testing labs for tests status. Soils lab has received ST #7 but has no preliminary results yet, geosynthetics testing lab has received GTX #1 (textured geomembrane conformance sample #1) and has begun materials testing. Due to the rain delay GeoSyntec plans to demobilize Ms. Harriet Lyon (GeoSyntec), at the approval of Mr. Larry Emerson.

16:30 GeoSyntec leaves site.

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: 7.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 25 day 5 month 1995 year

CONTRACTOR: Land and Lakes

WEATHER: 50°F, moderate winds, overcast in the morning clear by afternoon.

09:00 Arrive at 122nd street. Site is still generally wet from rain during previous two days. Cell VI contains ~~a significant~~ (RI) ponded water at the low areas of the base. Land and Lakes resume pumping of the ponded water into the leachate storage pond located south of Cell VI. LALC is still unable to perform earthwork at cell VI due the wet conditions. Serrot has not come to site since Tuesday (23 May 1995) due to rainy weather.

11:00 Depart site to take Ms. Harriet Lyon to the airport for her demobilization.

14:00 Return to site under clearing skies.
Obtain conformance samples:
- Geonet GN #1 and GN #2
- Geotextile GXT #1 and GXT #2
- Geocomposite GC #1

16:00 GeoSyntec departs site to drop-off samples at Federal Express office.

17:00 Conformance samples (above) are Fed-Ex'd to GeoSyntec's materials testing lab.

COPY TO: LARRY EMERSON PER: Ryan Tidwell HRS: 8

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Thursday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 25 day 05 month 1995 year

CONTRACTOR: Serrot

WEATHER: Sky: WIND: Temp.

Arrive on site. H.L.

12:00 Demob site: FQ2210

20.00 Arrive Park Falls, Wi.

Total 8 Hours

COPY TO: L.A.L.C. 122nd. ST + GeoSyntec PER: Harriet L. Lyon HRS: 8

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 26 day 5 month 1995 year

CONTRACTOR: Land and Lakes Co.

WEATHER: 52°F, clear, moderate winds

06:00 Arrive at 122nd street. Base of Cell VI has ponded water in low areas. Land and Lakes Co. resumes pumping water from the sump area of Cell VI to the leachate storage pond. LALC uses a D6 (dozer) at the base of Cell VI to backblade over the surface of the clay liner to spread the ponded water and promote drying. LALC also excavates soils at cell base from N 11800 E to N 12100 E. East side slope is too moist (soft) for Serrot to begin installing geomembrane. GeoSyntec collects 60 mil thick HDPE smooth geomembran conformance samples: GM #1 and GM #2

11:45 Speak with Mr. Larry Emerson regarding project status. Mr. Emerson requests that GeoSyntec obtain a ~~pro~~ liner protective soils conformance sample from (2) for the liner protective cover layer.

12:00 Receive verbal results of shelby tube sample ST #7 's hydraulic conductivity test - ST #7 meets project specifications.

12:45 Meet with John Prusko (LALC) and Serrot's superintendent regarding geomembrane installation along Cell VI east slope: Serrot requires additional textured geomembrane to complete the east slope, LALC needs to excavate an anchor trench along the top of the east slope, LALC needs to smooth drum roll the toe of the east slope, and the slope needs to dry further before Serrot can begin geomembrane installation.

14:00 Obtain liner protective cover layer soil conformance sample with Mr. Prusko (LALC). Sample is collected from R.I. Busse at an off site barrow source.

15:00 LALC continues soil excavation and drying activities at the base of Cell VI. Mr. Prusko states that LALC will work toward installing compacted clay liner tomarrow (27 May 1995). ~~but~~ (1) But because rain is forecast for tomarrow afternoon, and because Serrot does not have enough material at the site to complete the east slope with continuous panels, LALC

15:30 will not make final preparations for geosynthetics installation. GeoSyntec leaves site.

COPY TO: LARRY EMERSON PER: Bryan Tinsell HRS: 9.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 27 day 5 month 1995 year

CONTRACTOR: Land and Lakes Co.

WEATHER: 55°F, overcast, light intermittent rain

07:00 Arrive at cell VI under overcast skies. Land and Lakes crew (LALC) is working at the base of Cell VI. LALC uses a D6 (dozer) to blade off any remaining areas of ponded water and wet clay. The east slope and base of Cell VI are still soft in areas due to moist clay. Serrot is at site observing conditions. Serrot will not deploy geomembrane today. Serrot crew fills sand bags, checks seaming apparatus, and prepares equipment for future installation operations.

08:00 LALC begins placing lift 1 of the compacted clay liner between N 11800 E 5925 to N 12050 E 5925 and N 11800 E 6000 to N 12050 E 6000. LALC spreads lift 1 with a CAT D6 (dozer) and compacts the lift with a CAT 825 C sheeps foot (compactor). GeoSyntec conducts field density test # 37 on lift 1 - test # 37 meets project requirements. LALC begins constructing lift 2. Lift 2 meet project requirements (field density test #38). LALC constructs Lift 3. Lift 3 meets project requirements (field density test #39). LALC constructs Lift 4, which meets project requirements (field density test #40). LALC constructs Lift 5. Lift 5 meet project requirements

14:00 LALC & GeoSyntec leave site

COPY TO: LARRY EMERSON PER: Bryan Tindell HRS: 7.0

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 4 day JUNE month 1995 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 4 JUNE 95, FOR CONSTRUCTION OF CELL VI

COMPACTED CLAY LINER:

LAND AND LAKES CREW CONTINUE TO PLACE CLAY MATERIAL IN 6" COMPACTED LIFTS, PLACING MATERIAL USING TWO VOLVO A35 DUMP TRUCKS TO HAUL MATERIAL THEN SPREAD CLAY LIFTS WITH A CAT-D6H DOZER AND COMPACT USING A CAT-835. CREW PLACING LIFT #1 AND #2 AT WEST END OF CELL VI AND LIFTS #3 & #4 IN THE NORTH WEST CORNER OF CELL.

GEOSYNTEC CONDUCTED 6 FIELD MOISTURE/DENSITY TEST ON COMPACTED CLAY LINER, 5 PASSED AND 1 FAILED. THE FAILED TEST LOCATION WAS REWORKED AND RETESTED WITH RESULTS PASSING CQA PLAN REQUIRMENTS. IN ADDITION OBTAINED PERFORMANCE SAMPLES, P.C.L. #4, #5, #6 & #7 AND SHELBY TUBE (ST) SAMPLES, ST #8, #9 AND #10; RESULTS PENDING

GEOSYNTHETICS LINER SYSTEM:

ON TUESDAY MAY 30th, SERROT'S CREW BEGIN DEPLOYING 60 MIL. TEXTURED H.D.P.E. PANEL #1 – #19. SERROT'S CREW DEPLOYED APPROXIMATE 65,120 S.F. AND SEAMED APPROXIMATE 2,960 LINER FEET. OF SEAM. SERROT ALSO DEPLOYED APPROXIMATE 49,725 S.F. OF GEOCOMPOSITE TENSAR 4205, OVER TO 60MIL TEXTURED LINER ON THE EAST SLOPE OF CELL VI.

GEOSYNTEC MONITORED ABOVE CONSTRUCTION ACTIVITIES BY SERROT AND LAND AND LAKES CREW'S. FOUR (4) ADDITIONAL ROLL OF 60 MIL. TEXTURED H.D.P.E. LINER ARRIVED ON SITE

COPY TO: LARRY EMERSON PER: David Williams

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 4 day JUNE month 1995 year

THIS WEEK AND MATERIAL WAS INVENTORYED. GEO SYNTEC OBTAINED TWO ADDITIONAL SAMPLES OF THE GEOTEXTILE TERVA 1125, FOR CONFORMANCE TESTING, RESULTS PENDING. MONITORED SERROT'S TRIAL SEAM TESTING AND FIELD TESTING OF DESTRUCTIVE SAMPLES (D.S.), DS#1 -#6; PASSED. DESTRUCTIVE SAMPLE #1-#6 WERE SHIPPED TO GEOSYNTEC, MATERIAL TESTING LABORATORY (M.T.L.) FOR TESTING. RECEIVED RESULTS FROM M.T.L. ON CONFORMANCE SAMPLES, G.T.#1 AND GM#1 & #2; ALSO DESTRUCTIVE SAMPLES (DS) #1 - #6, RESULTS MEET SPECIFICATION OUTLINED IN THE CQA PLAN. INFORMED LAND AND LAKES CO AND SERROT OF RESULTS.

COPY TO: LARRY EMERSON PER: David Williams

4 JUNE

LEGEND

538 — TOP OF LINER ELEVATION

— · — · — · — LIMIT OF LINING SYSTEM

60 MIL. TEXTURED H.D.P.E.

LIFTS 1 & 2 (CLAY)

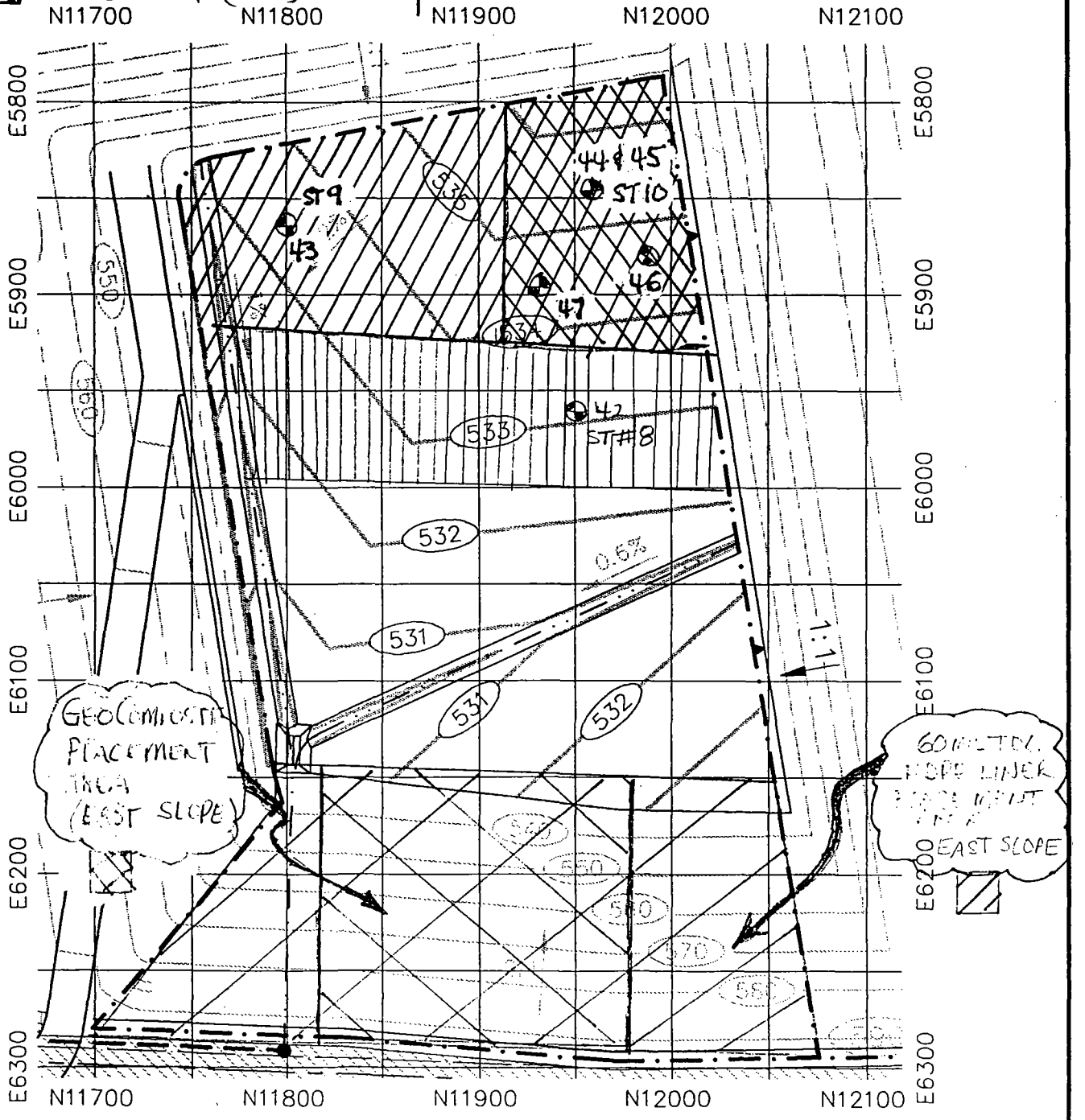
LIFTS #3 & 4 (CLAY)

LIFT #6 CLAY

DESTRUCTIVE SAMPLE #42 - #47

0 40 80

1 inch = 80 ft.



GEOSYNTEC CONSULTANTS

2210F001 199505191613RT

FIGURE NO.	1
PROJECT NO.	FQ2210
DOCUMENT NO.	
PAGE NO.	

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 30 day MAY month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: CLEAR, 78° CALM

1400 GEOSYNTEC CONSULTANTS ON SITE, LAND AND LAKES CREW AND SERROT CREW ON SITE (LINER INSTALLER)

- SERROT DEPLOYING 60 MIL TEXTURED ON EAST SLOPE OF CELL VI, PANELS #1 - #7, CREW ADDITIONAL COMPLETED AIR PRESSURE TESTING OF FUSION WELDED SEAM. (SEE PANEL PLACEMENT & SEAMING LOG).
- LAND AND LAKES CREW PLACING LIFT #6 ON BASE OF CELL VI (SEE SKETCH) AND EXCAVATING ALONG WEST END OF CELL FLOOR.
- GEOSYNTEC MONITORING PANEL DEPLOYMENT ON THE EAST SLOPE (CLAY 1×10^{-7}) AND SEAMING OF PANEL #1 - #7. IN ADDITION MONITORED CLAY PLACEMENT AND COMPACTION OF LIFT #6 OUTLINED IN FIELD SKETCH. FIELD DENSITY TEST #42 ON LIFT #6 PASSED, INFORMED JOHN PRESKO (LAND AND LAKES). CREW PLAN'S TO CONTINUE TO EXCAVATE WEST EDGE OF CELL.

1600 LAND AND LAKES CREW STOP WORK & DEPART SITE. SERROT CONTINUE TO CONDUCT NON DESTRUCTIVE TESTING OF SEAM #1/2, 2/3, 3/4, 4/5, 5/6 AND 6/7 AS GEOSYNTEC MONITORS AIR PRESSURE TESTING.

1700 WORK STOPPED SERROT OFF SITE, GEOSYNTEC MEASURING PANEL & SEAM.

1745 GEOSYNTEC OFF SITE

COPY TO: _____ PER: David Williamson HRS: 3.75

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 31 day MAY month 1995 year

CONTRACTOR: SERROT

WEATHER: 79° CLEAR, CALM WIND.

0600 ON SITE, LAND AND LAKES CO. (LALC) WILL CONTINUE TO EXCAVATE CLAY MATERIAL FROM FLOOR OF CELL VI, WEST EDGE. GEOSYNTEC WALKING GEOMEMBRANE TEXTURED 60 MIL. LINER DEPLOYED ON THE EAST SLOPE #1 – #7; MARKING DESTRUCTIVE SAMPLES #1 – #3 AND REPAIRS TO PANEL'S.

0700 · SERROT ON SITE, RUNNING ONE EXTRUSION TRIAL SEAM SAMPLE (EQUIP. #22) PASSES. PREPARING TO COMPLETE REPAIRS ON PANEL DEPLOYED AND REMOVE DESTRUCTIVE SAMPLES (D.S.) #1 – #3.

0935 · SERROT COMPLETED REPAIRS + REMOVED DS#1-3, FROM PANEL #1 – #7. NOTE: ADDITIONAL ROLL OF TEXTURED 60 MIL HDPE LINER ARRIVED ON SITE. SERROT CREW WILL CONTINUE TO DEPLOY PANEL ALONG THE EAST SLOPE; PANEL #8 – 10

GEOSYNTEC MONITORING DEPLOYMENT & SEAMING OPERATION CONDUCTED BY SERROT'S CREW, ON THE EAST SLOPE

1230 SERROT CREW BEGIN SEAMING 60 MIL. TEX. HDPE LINER, SEAM #7/8 & #8/9, AND BEGIN TO DEPLOY THE GEOCOMPOSITE OVER 60 MIL LINER ON THE EAST SLOPE, GEOMEMBRANE PANEL #1, WILL DEPLOY ONE PANEL ONLY, SURVEYORS WILL BE ON SITE AT 0800 HRS TO VERIFIEY CLAY SUB GRADE AND SHOOT SEAMS OF 60 MIL. HDPE LINER.

· SERROT CREW CONTINUE TO DEPLOY 60 MIL. HDPE AND SEAM PANEL ON THE EAST SLOPE OF CELL #VI.

1350 · LAND AND LAKES CO. CREW CONTINUE TO EXCAVATE TO CLAY SUB-GRADE ALONG WEST EDGE OF CELL VI.

GEOSYNTEC MONITORING FIELD TESTING OF DS#1 – #3, RESULTS MEET JOB SPECIFICATION; DESTRUCTIVE SAMPLES DS#1-3, SENT TO M.T.L.

NOTE: SERROT STANDING BY FOR ADDITIONAL 60 MIL TEX. LINER TO ARRIVE ON SITE. MATERIAL ON SITE AT 1000 HRS.

COPY TO: PER: David Williams HRS: —

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 31 day MAY month 1995 year

CONTRACTOR: SE

WEATHER: 83° CLEAR AND CALM

FOR LABORATORY DESTRUCTIVE TESTING. OBTAINING SOIL SAMPLE PCL#4 (PERFORMANCE SAMPLES), CLAY MATERIAL FOR TESTING BY GEL. IN ATLANTA, GA. LABORATORY.

· SERROT CONTINUE TO DEPLOY PANEL #11 - #14 AND SEAM PANEL ON THE EAST SLOPE. GEO SYNTEC WILL MONITOR SEAMING OPERATION AND MARK LOCATIONS OF DS#4 - #6 TO BE REMOVED BY SERROT'S CREW.

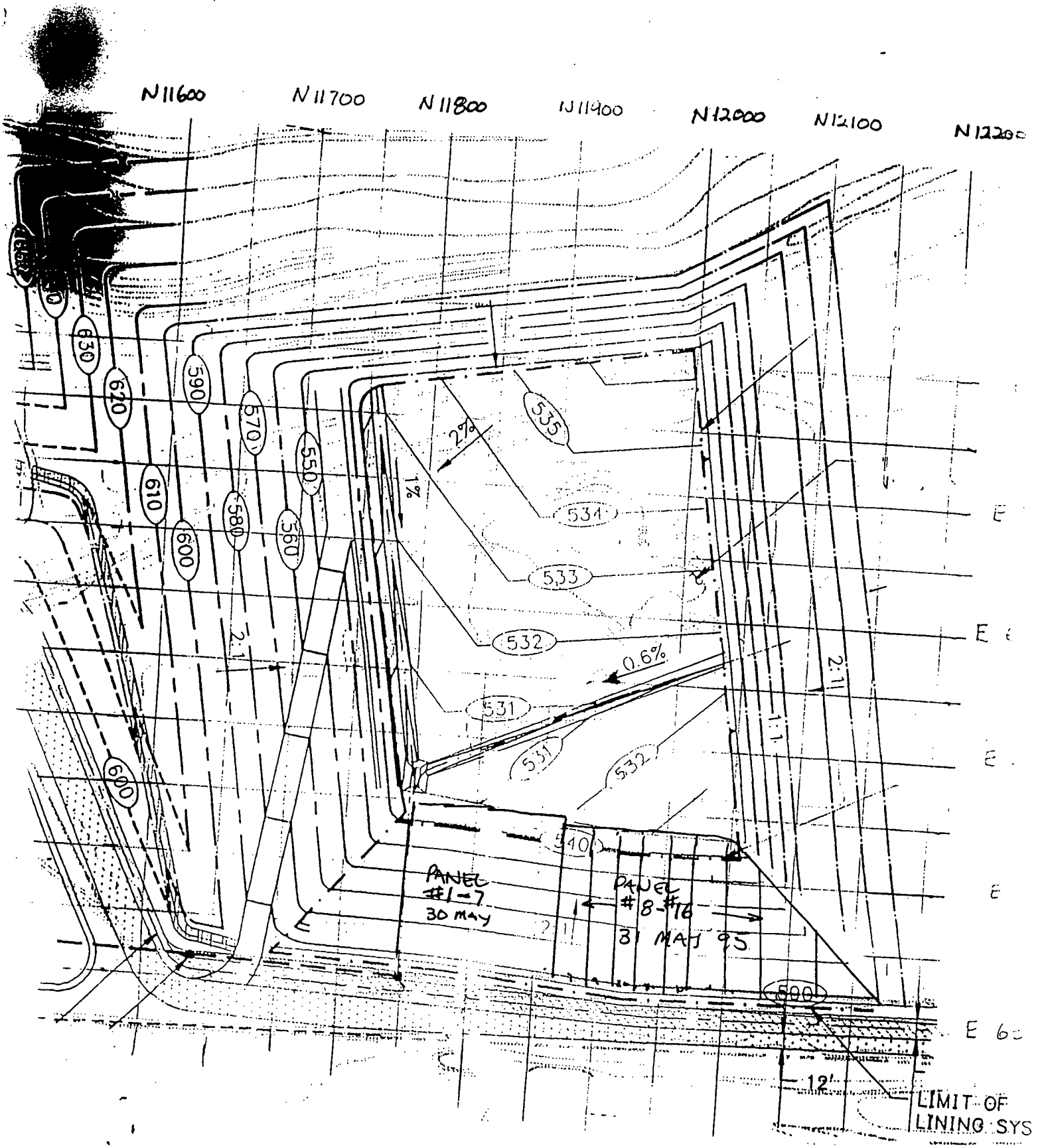
LAND AND LAKES CREW STOP WORK AT 1600 HRS, SERROT'S CREW CONTINUE SEAMING PANEL #15 & #16.

1730 . . . STOP WORK & DEPART SITE; GEOSYNTEC DEPART TO AIRPORT TO PICK-UP QC MONITOR H. LYON. H. LYON FLIGHT DELAYED ARRIVED AT 2100 HRS.

2130 DEPART FOR HOTEL.

COPY TO: PER: David Willson HRS: 15

30 MAY


N11600
N11700
N11800
N11900
N12000
N12100
N12200
630
620
590
570
550
610
580
560
600
600
535
531
533
532
531
531
532
540
2%
1%
0.6%
2:1
2:1
1:1
PANEL #1-7 30 MAY
PANEL #8-#16 31 MAY 95
500
12'
LIMIT OF LINING SYS

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 1 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 77° OVERCAST, LIGHT WINDS

0600 ON SITE, WITH H. LYON (GEOSYNTEC) GEOSYNTHETICS CQA, TOUR SITE AND DISCUSS ACTIVITIES

- LAND AND LAKES CREW CONTINUE TO EXCAVATE TO CLAY SUB-GRADE ALONG WEST EDGE OF CELL #VI.

0700 SERROT ON SITE, H. LYON MONITORING ACTIVITIES ON THE EAST SLOPE. SERROT REMOVING DS#4 – DS#6 FOR FIELD TESTING.

- GEOSYNTEC OBTAINING PERFORMANCE SAMPLE (SOIL) FROM BASE OF CELL VI, PCL#5, PCL#6 AND PCL#7. IN ADDITION GEOSYNTEC OBTAINED CONFORMANCE SAMPLE FROM ROLL OF GEOTEXTILE, GTX#2 FROM 7 oz. MATERIAL AND GTX#3.

1010

- MONITORING TESTING (FIELD) DS#4 – DS#6, WILL SHIP DESTRUCTIVE SAMPLES #4-#6 TO M.T.L. IN BOCA RATON, FL.
- RECEIVED RESULTS ON DS#1 – DS#3, ALL MEET SPECIFICATION REQUIRMENTS; INFORM SERROT OF TEST RESULTS.

1230 LAND AND LAKES CREW BEGIN PLACING LIFT #1 ALONG WEST EDGE OF CELL VI, SEE ATT. MAP FOR LOCATION. ALSO CREW COMPACTING LIFT #1 W/ CAT-825C COMPACTOR, MAKING 4 PASSES

- GEOSYNTEC MONITORING PLACEMENT & COMPACTION METHODS BY
- LAND AND LAKE'S CREW, AND WILL TEST COMPACTION USING A NUCLEAR MOISTURE/DENSITY GUAGE. FIELD DENSITY TEST #43 PASSED ON LIFT #1. CREW BEGIN TO SPREAD LIFT #2 IN A 6" LOOSE LIFT USING A CAT D6H L.G.P. DOZER.

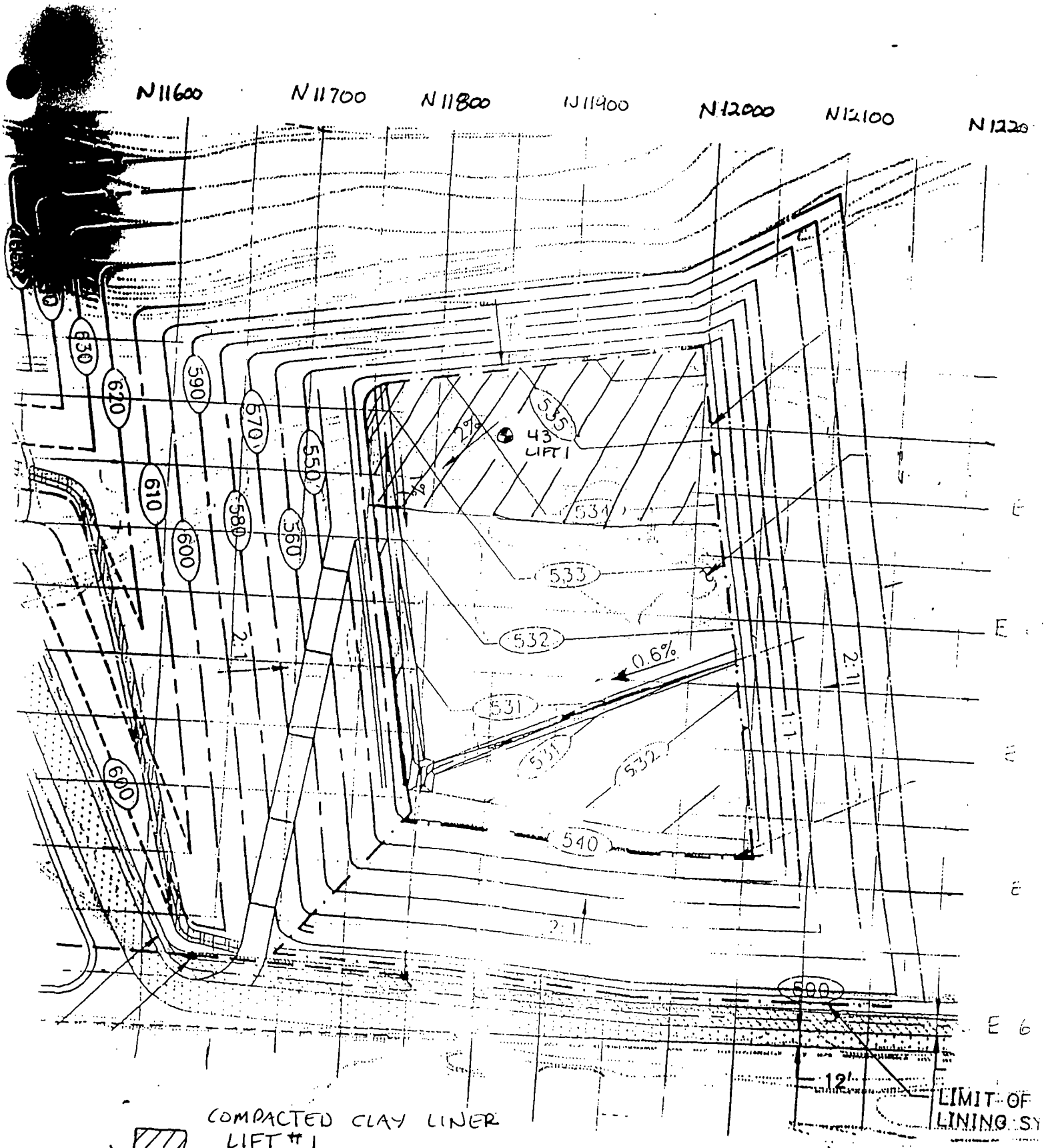
1630 LAND AND LAKES CREW STOP WORK & DEPART SITE; SERROT'S CREW CONTINUE TO DEPLOY GEOCOMPOSITE OVER 60MIL. TEXTURED LINER DEPLOYED ON THE EAST SLOPE.

1715 SERROT STOP DEPLOYING GEOCOMPOSITE, USING SANDBAGS TO ANCHOR DEPLOYED GEOCOMPOSITE.

1730 SERROT & GEOSYNTEC DEPARTING SITE

COPY TO: PER: David Williams HRS: 11.5

1 JUNE



COMPACTED CLAY LINER
LIFT # 1

FIELD DENSITY TEST
LOCATION

DENSITY TEST # 43 PASSED

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

Thursday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 01 day 06 month 1995 year

CONTRACTOR: Serrot

WEATHER: Sky: Mostly Cloudy WIND: Light Temp. +71°

0600 Arrive on site.

0645 Serrot Arrives on site.
Go over Previous Work with David Williams Geo-Syntec Personel.

0737 Monitor and Maintain Ext. Trial Seam Log.

0800 Monitor and Maintain Air Pressure Logs Panels 7 THRU 15.

0900 Monitor and Maintain Field Testing of DS 4 (Pass) DS-5 (Pass) DS-6 (Pass).

1150 Serrot Begins Placement of Geo Composit - Temp. +77°
Panel 2 - 1 Placed over THRU 10.

1715 Serrot Ceases all work Production.
Serrot Leaves site.

1730 Leave site.

COPY TO: L.A.L.C. 122ND ST. & GeoSyntec PER: Harriet L. Lyon HRS: 11.5

 FILE NO. 1-04-DFR

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 2 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 69, OVERCAST, LIGHT WIND

0600 ON SITE, LAND OF LAKES CREW CONTINUE TO PLACE AND COMPACT CLAY MATERIAL, PLACING A 8" LOOSE LIFT AND COMPACT TO A 6" LIFT. PLACING LIFT #2 ALONG WEST EDGE OF CELL VI.

0700 SERROT ON SITE; WILL CONTINUE TO DEPLOY GEOCOMPOSITE OVER 60MIL. TEX. ALONG EAST SLOPE, AND DEPLOYING & SEAMING PANEL #17 - #19 ON SLOPE.

- SURVEYORS ON SITE LAYING OUT LEACHATE COLLECTION TRENCHES AND LOCATING SUMP AREA.

0920 - GEO SYNTEC CONDUCTING FIELD DENSITY TEST #44, TEST FAILED WILL OBTAIN A SHELBY TUBE SAMPLE #10, FROM. RETEST #45 PASSED.

- LAND AND LAKES CREW CONTINUE TO PLACE CLAY MATERIAL (1×10^{-7}) IN 6" COMPACTED LIFT, SEE ATTACHED MAP FOR LOCATIONS.
- SERROT CREW SEWING GEOCOMPOSITE, AFTER COMPLETING TIEING THE GEOCOMPOSITE (GEONET) WITH TIE WRAPS AS OUTLINED IN THE CQA PLAN.

1235 - GEO SYNTEC MONITORING CLAY PLACEMENT + COMPACTION OF LIFT #3 AT WEST END OF CELL VI.

- SERROT STOP WORK DUE TO RAIN & DEPART SITE AT 1200 HRS.
- GEO SYNTEC CONDUCTING SAND CONE TEST #1 FOR COMPARISON TO THE NUCLEAR DENSITY GUAGE (TROXLER 3430, SER #22166).

1500 - RAIN CONTINUES, LAND AND LAKES CREW STOP WORK DUE TO RAIN.

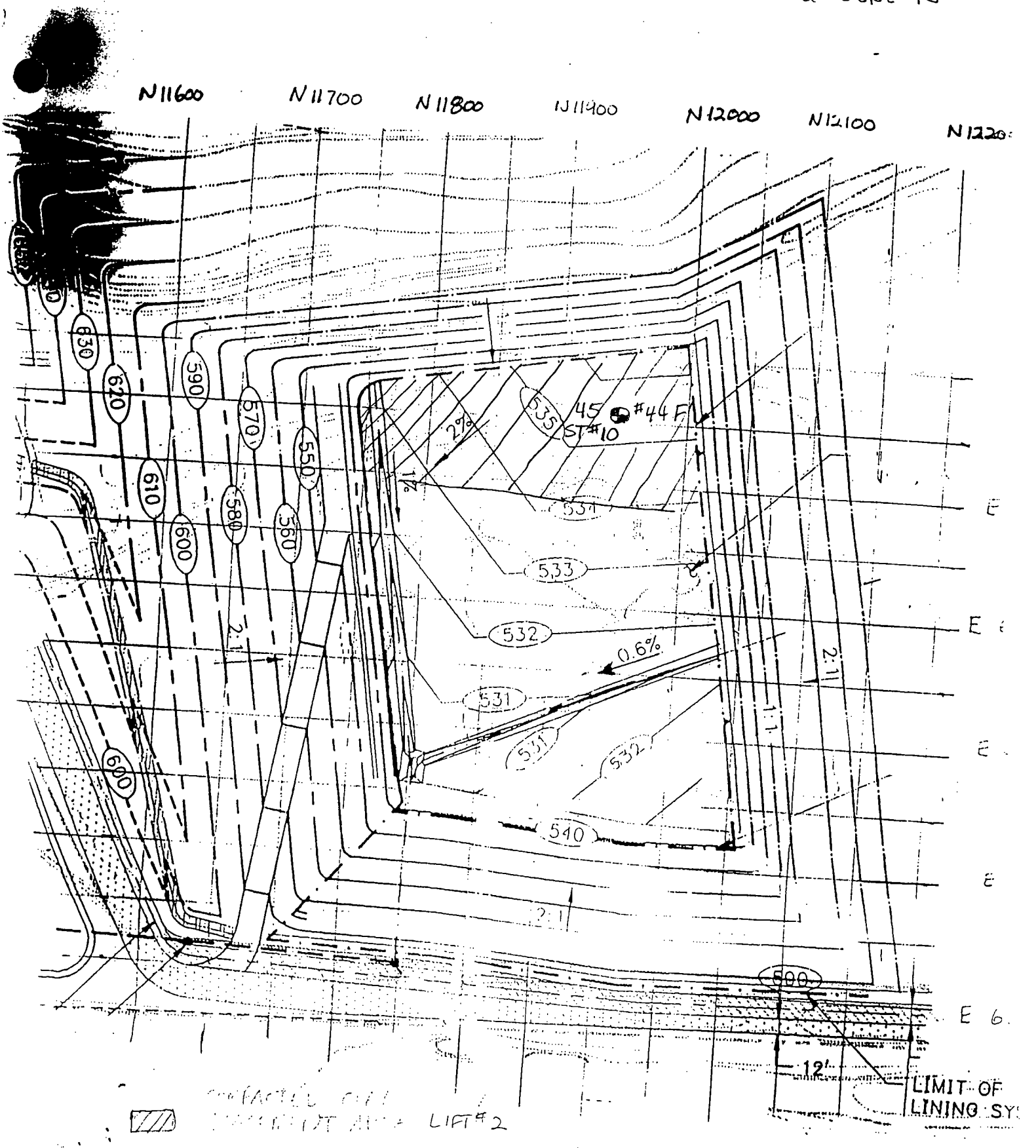
- GEO SYNTEC RECEIVED DESTRUCTIVE SAMPLE TEST RESULTS ON SAMPLES DS #4 - 6 MEET CQA PLANS SPECIFICATIONS.

1600 DEPART SITE.

NOTE: SAND CONE TEST CONDUCTED AT DENSITY TEST #44

COPY TO: PER: David Williams HRS: 10

2 JUNE 95


N11600
N11700
N11800
N11900
N12000
N12100
N12200
630
620
590
570
550
610
580
560
600
600
535
45
#44 F
ST #10
2%
1½
531
533
532
0.6%
531
531
532
540
2:1
2:1
2:1
2:1
500
12'
LIMIT OF
LINING SY
LIFT #2
45 DEGREE BEND OF ST. #10

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Friday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 02 day 06 month 1995 year

CONTRACTOR: SerroT

WEATHER: Sky: Partly Cloudy/Hazy Wind: Light Temp. +69°

0600 Arrive on site.
0645 SerroT Arrives on site.
0720 SerroT Begins Placement of Composit over Geomembrane Panels 10 THrw 13.
0730 ENTer D/S Lab TesTs in Proper Logs.
D/S-1 (Pass) D/S-2 (Pass) D/S-3 (Pass.
0800 Work on Personel Daily Logs.
0910 SerroT Begins Placement of Geomembrane Panel - 17 THrw 19 TexTured maTerial
0910 MoniTor and MainTain Fusion TRial Seams.
0915 MoniTor and maiNTain Panel Placement Logs.
0930 MoniTor and MainTain Seaming Logs.
NoTe SerroT Seaming Composit Deployed on June 1, 1995
1049 MoniTor and maiNTain Air Pressure Logs.
Panels 1-17 Thrw 19.
1100 SerroT ceases Fusion Seaming.
1130 MoniTor and MainTain Ext. TRial Seam Log.
1145 SerroT V-Box TesTing Panels 17-18-19.
1150 LT. Rain Begins.
1155 SerroT ceases Ext. Welding.
NoTe: SerroT Sewing THRead - Union Special 92200-B, EDDingTon THread MFG. 207 Polyester
1200 Due To Heavier Rain SerroT ceases all work and Leaves SiTe.
1215 Work on Seam and Panel Layout T-DRawings.
1500 Leave SiTe. Rain conTinues.

COPY TO: L.A.L.C 122ND ST + GeoSynTec PER: Harriet L. Lyon HRS: 9.0

 FILE NO. 1-04-DFR

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 3 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 60° OVERCAST W/LIGHT WIND

0600 ON SITE; CONDITION IN BASE OF CELL VI WET DUE TO RAIN OVERNIGHT.

- SERROT UNABLE TO DEPLOY 60 MIL. SMOOTH LINER OVER CLAY (1×10^{-7}) DUE TO HIGH MOISTURE CONTENT:
- LAND AND LAKES CREW PLAN TO REMOVE SATURATED CLAY IN LIFT #3 AND CONTINUE TO PLACE AND COMPACT CLAY MATERIAL IN 6" LOOSE LIFT. GEOSYNTEC MONITOR ACTIVITIES AS CREW THEY DRESS UP HAUL ROADS AND BEGIN TO HAUL CLAY. CREW HAULING CLAY MATERIAL, EXCAVATED FROM CELL VI AREA AND STOCKPILED JUST WEST OF CELL VI.

1000

- GEOSYNTEC TESTING LIFT #3 PLACED IN THE NORTHWEST CORNER OF CELL VI, DENSITY TEST #46. CREW WILL CONTINUE TO PLACE AND COMPACT LIFT 4 IN THE NORTHWEST CORNER OF CELL VI
- NOTE: LAND AND LAKES CO. CREW UNABLE TO PLACE CLAY IN THE SOUTH WEST CORNER OF CELL DUE TO MOISTURE CONTENT.
- GEOSYNTEC MONITORING PLACEMENT & COMPACTION METHODS; 6" COMPACTED LIFTS, AND MAKING 4 PASSES MIN. WITH THE CAT 835 C COMPACTOR.

TESTING DENSITY OF LIFT #4, TEST #47 MEET REQUIRED CQA PLAN SPECIFICATION.

1400 LAND & LAKES CREW STOP WORK & DEPART SITE

1415 GEOSYNTEC OFF-SITE.

COPY TO: PER: David Williams HRS: 8.25

3 JUNE

LEGEND

538 TOP OF LINER ELEVATION

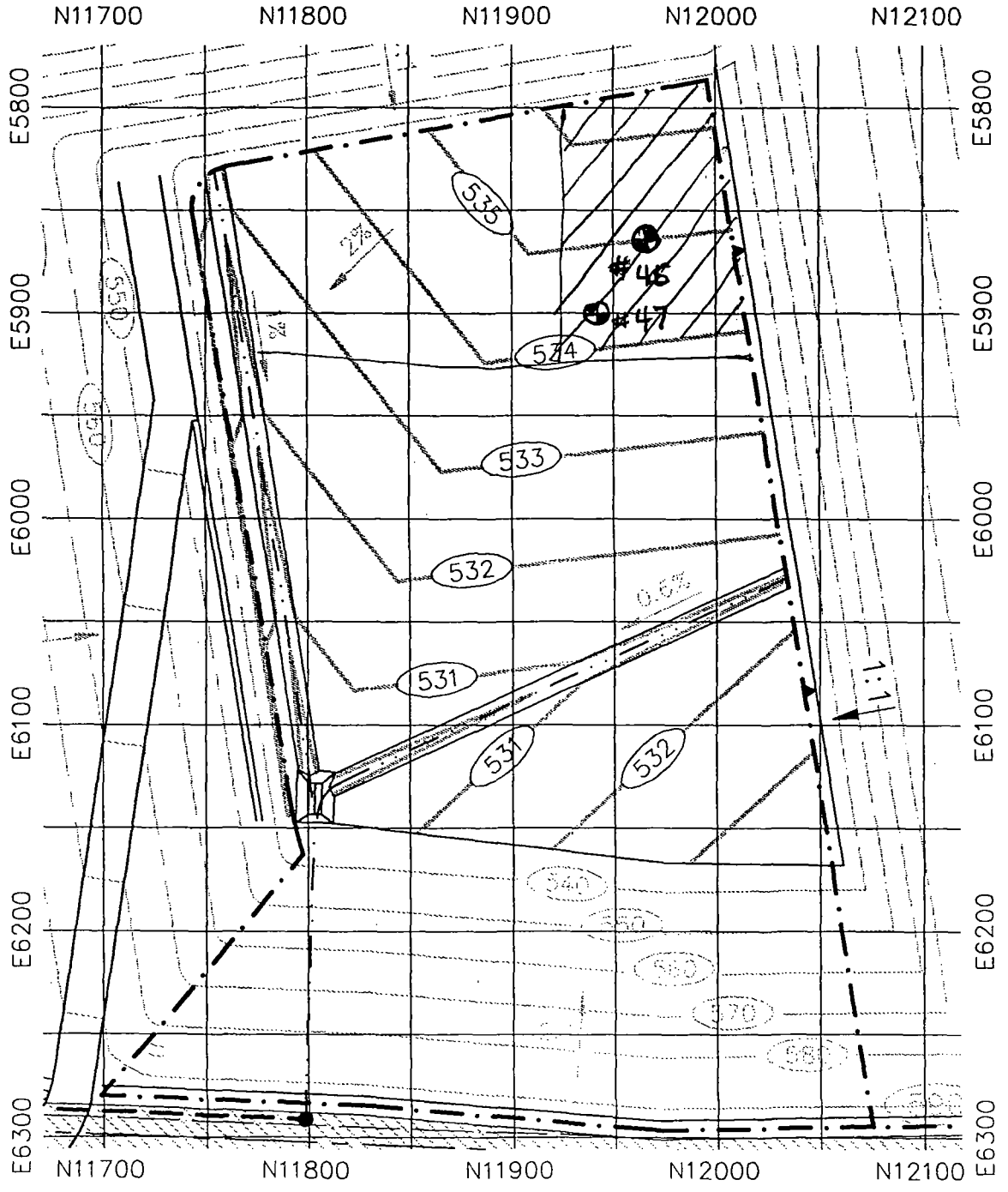
LIMIT OF LINING SYSTEM

COMPACTED CLAY AREA
LIFT 3

FIELD DENSITY TEST LOCATION

0 40 80

1 inch = 80 ft.



GeoSyntec Consultants

FIGURE NO.	1
PROJECT NO.	FQ2210
DOCUMENT NO.	
PAGE NO.	

2210F001 199505191613RT

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Saturday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 03 day 06 month 1995 year

CONTRACTOR: SerroT

WEATHER: Sky: Partly Cloudy Wind: Light Temp. +60°

0600 Arrive on Site.

0615 Cross Reference Seaming and Air Pressure Logs.

0715 Work on Repair Summary Logs.
End Weeks Report. See Weekly Report.

1000 Leave Site.

Note: Due To Rain From June 2, SerroT NoT working This Date.

COPY TO: L.A.L.C.-122nd St. + GeoSyntec PER: Harriet L. Lyon HRS: 4.

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 11 day JUNE month 1995 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 11 JUNE 95, FOR THE CONSTRUCTION OF CELL VI.

COMPACTED CLAY LINER:

- LAND AND LAKES CO. (L.A.L.C.) CONTINUE TO PLACE CLAY MATERIAL IN 6" COMPACTED LIFTS; LIFTS #3 – #6. MATERIAL WAS PLACED AT WEST END OF CELL VI, FROM E 5900 N 17020 TO E 5800 N 17050. MATERIAL WAS HAULED FROM STOCKPILE USING VOLVO A35's DUMP TRUCKS, THEN SPREAD MATERIAL WITH A CAT D6H DOZER AND COMPACT LIFTS USING A CAT 825-C.
- GEOSYNTEC CONSULTANTS CONDUCTED 4 FIELD MOISTURE DENSITY TEST ON THE COMPACTED CLAY LINER, ALL PASSED TEST REQUIRMENTS. OBTAINED TWO SHELBY TUBE SAMPLE'S #11 AND #12 FROM THE COMPACTED CLAY LINER AND CONDUCTED TWO SAND CONE TEST.
  RECEIVED RESULTS ON PREFORMANCE TESTING SAMPLES PROCTIVE COVER LAYER (P.C.L.) #4 – #7. AND SHELBY TUBE (S.T.) RESULTS ON S.T.#8 – ST#10, ALL RESULTS INDICATE SAMPLES MEET CQA PLAN REQUIRMENTS.
- LAND AND LAKES CO. COMPLETED PLACEMENT & COMPACTION OF COMPACTED CLAY LINER IN CELL VI.

GEOSYNTHETICS LINER SYSTEM

- SERROT'S CREW UNABLE TO DEPLOY LINER THIS WEEK DUE TO RAIN. NINE ROLL OF GEOCOMPOSITE ARRIVED ON SITE AND MATERIAL WAS INVENTORED.
  GEOSYNTEC DEMOBED SITE ON JUNE 8th DUE TO WEATHER DELAYS.

COPY TO: LARRY EMERSON PER: David Williamson

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 5 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 64° CLEAR, LIGHT WINDS

0600 ON SITE, LAND AND LAKES CREW WILL CONTINUE TO PLACE CLAY MATERIAL IN BASE OF CELL VI. PLACING LIFT # 3 IN THE SOUTH WEST CORNER, GEOSYNTEC MONITORING PLACEMENT AND COMPACTION METHODS.

0700 · SERROT CREW ON SITE, UNABLE TO DEPLOY LINER ON FLOOR OF CELL DUE TO CLAY SUBGRADE NEEDING LEACHATE COLLECTION TRENCH & ANCHOR TRENCHES CUT. ALSO UNABLE TO COMPLETE GEOCOMPOSITE DEPLOYMENT UNTIL ADDITIONAL MATERIAL ARRIVES ON SITE.
· SERROT DEPART SITE AT 0810 HRS.

0945 · GEOSYNTEC TESTING LIFT #3 AT SOUTH WEST CORNER OF CELL, SEE ATTACHED MAP. FIELD DENSITY TEST #48 PASSED REQUIRED SPECIFICATIONS
· CREW CONTINUE TO PLACE LIFT #4 AND COMPACT TO 95% MAX. DRY DENSITY. CREW USING A CAT D6H DOZER TO SPREAD 6" COMPACTED LIFTS AND COMPACTING WITH A CAT 825-C.
· DISCUSS WITH JOHN PRESKO (LAND AND LAKES) PLANS TO USE SOME TYPE OF NONWOVEN GEOTEXTILE AS U.V. PROCTION FOR THE GEOCOMPOSITE ALONE THE EAST SLOPE.

1245 TESTING LIFT #4 OF COMPACTED CLAY MATERIAL AT WEST END OF CELL VI, DENSITY TEST #49, PASSED; ALSO OBTAINED SHELBY TUBE SAMPLE (S.T.) # 11 FROM TEST LOCATION.
· CREW WILL CONTINUE TO PLACE LIFT #5 AND EXCAVATE LEACHATE COLLECTION TRENCH ACROSS CELL VI AREA.
· GEOSYNTEC LOGGED IN ST #11, PREPARE SAMPLE FOR SHIPPMENT TO M.T.L. IN ATLANTA, GA. FOR HYDRAULIC CONDUCTIVITY.

1535 TESTING DENSITY OF LIFT #5, SEE ATT. MAP FOR LOCATION OF TEST #50, TEST MEET REQUIRMENTS OUTLINED IN THE CQA PLAN.

1715 DEPART SITE.

NOTE: SERROT UNABLE TO DEPLOY LINER ON BASE OF CELL, LAND AND LAKES CREW CONTINUE WORK ON SUB-GRADE

COPY TO: LARRY EMERSON PER: David Williams HRS: 9.25

LEGEND

538 — TOP OF LINER ELEVATION

— · — · — LIMIT OF LINING SYSTEM

COMPACTED CLAY LINER LIFTS #3 AND 4

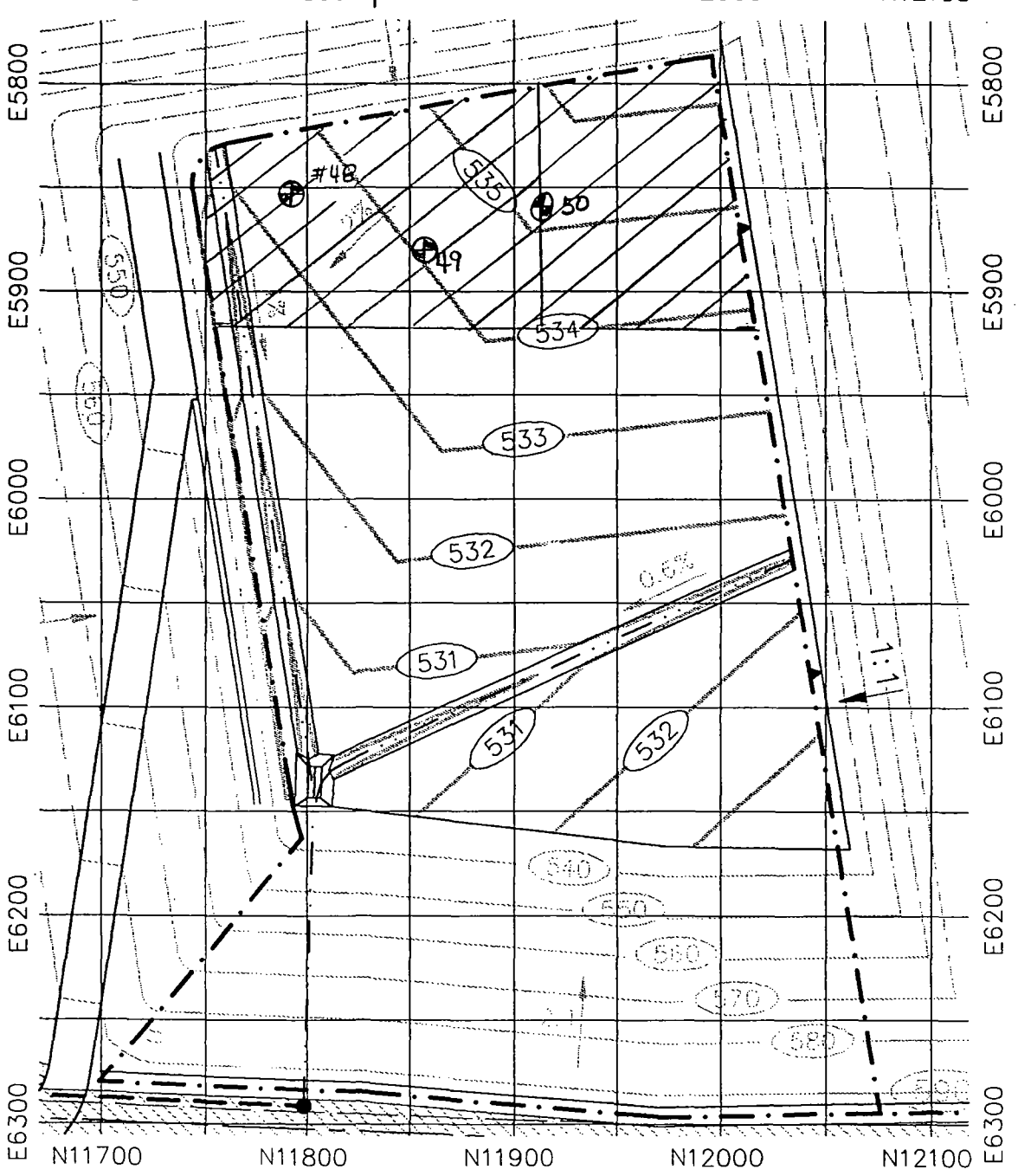
LIFTS #5

FIELD MOISTURE/DENSITY TEST LOCATION

S.T. # 11 OBTAINED FROM LIFT 4 TEST #49

0 40 80

1 inch = 80 ft.



GeoSyntec Consultants

2210F001 199505191613RT

FIGURE NO.	1
PROJECT NO.	FQ2210
DOCUMENT NO.	
PAGE NO.	

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Monday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 05 day 06 month 1995 year

CONTRACTOR: SerroT

WEATHER: Sky: Partly Cloudy Wind: Light Temp. +64°

0600 Arrive on site.

0645 SerroT Arrives on site.

Receive Results From M.T.L. on D/S-4 (Pass) D/S-5 (Pass) D/S-6 (Pass). Enter in Proper Logs.

Note: SerroT Sews composit Deployed on 2nd of June.

1000 Leave Site. Other GeoSyntec Personel still on site.

COPY TO: L.A.L.C 122nd ST. + GeoSyntec PER: Harriet L. Lyon HRS: 4.

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 6 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 67° CLEAR LIGHTS WINDS.

0600 ON SITE, LAND AND LAKES CREW CONTINUE TO PLACE CLAY LINER, LIFT #6 AND COMPACT WITH A CAT 825-C. EXCAVATING TRENCHS FOR LEACHATE COLLECTION. CREW PREPARING CLAY LINER SURFACE FOR DEPLOYMENT OF 60 MIL. SMOOTH H.D.P.E. LINER, AT TOE OF EAST SLOPE. SERROT COMPLETING SEWING OF GEO COMPOSITE, AND STANDING BY, WILL DEPLOY AS SOON AS CLAY SURFACE IS ROLLED.

1000 · GEOSYNTEC CONDUCTING FIELD DENSITY TEST #50 ON LIFT #6 RESULTS MEET JOB SPECIFICATION. IN ADDITION OBTAINED SHELBY TUBE SAMPLE #12 FROM LIFT #6 AT DENSITY TEST #51 AND CONDUCTED SAND CONE TEST #2 AT SAME LOCATION.

· GEOSYNTEC MONITORED LAND AND LAKES CREW AS THEY EXCAVATE ANCHOR TRENCHES AND USE A SMOOTH DRUM ROLLER TO ROLL FLOOR OF CELL VI.

1300 · SERROT CREW STATES SURFACE NEED ADDITONAL WORK.

1320 · VERY GUSTY WINDS BEGIN WITH RAIN; SERROT DEPARTS SITE.

· GEOSYNTEC DISCUSS WITH L. EMERSON (L.A.L.C) LINER PROCTIVE COVER AND PIPE BEDDING GRAVEL SPECIFICATION. REQUEST SAMPLE OF PIPE BEDDING GRAVEL FOR CONFORMANCE TESTING.

1400 DEPART SITE.

COPY TO: Larry Emerson PER: Daniel Wilk HRS: 8

6 JUNE

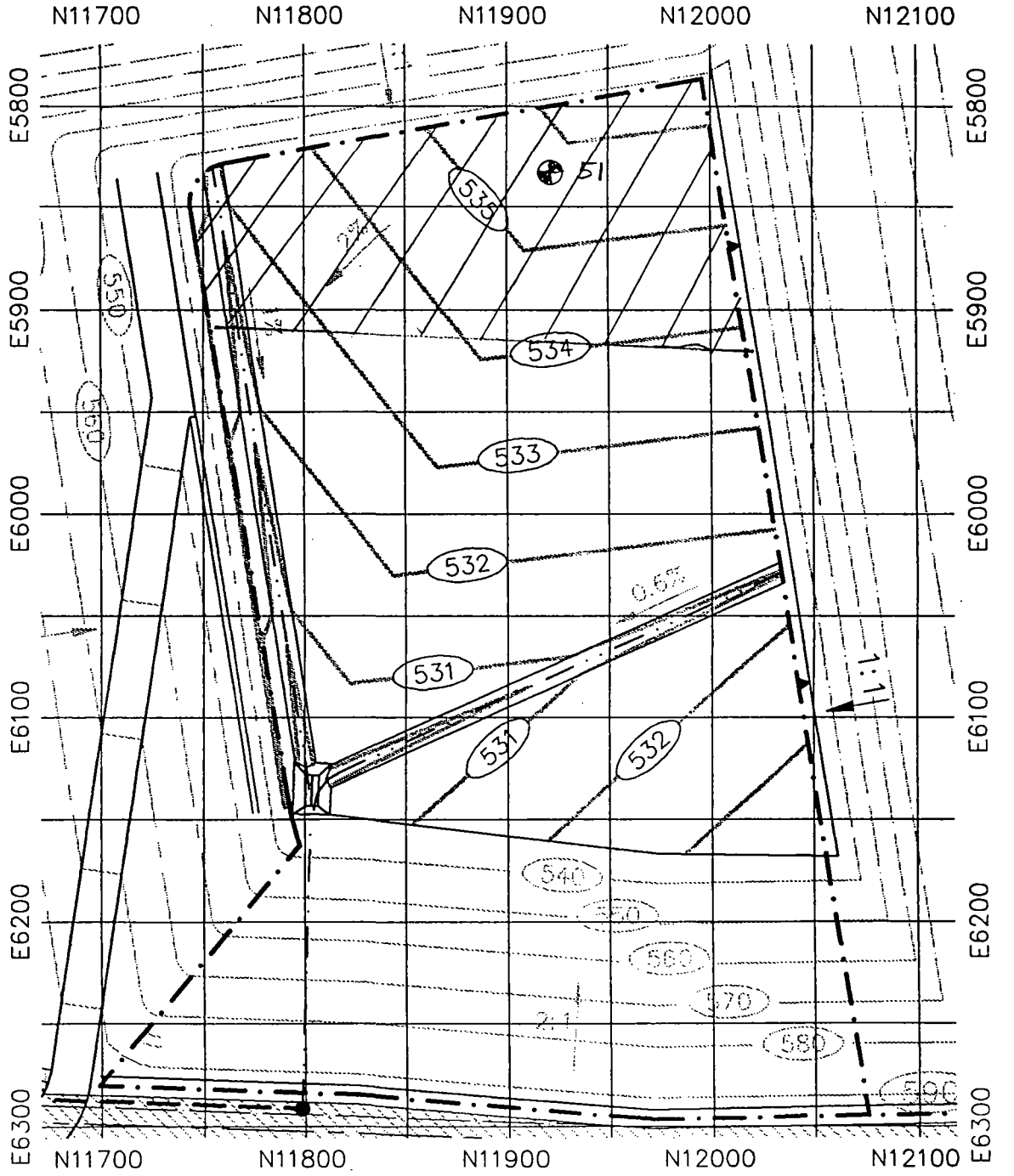
LEGEND

538 — TOP OF LINER ELEVATION

— · — · — LIMIT OF LINING SYSTEM

COMPACTED CLAY LINER
LIFT #6; DENSITY #51; SAND CONE TEST #2 LOCATION.

0 40 80
1 inch = 80 ft.



GEOSYNTEC CONSULTANTS

FIGURE NO.	1
PROJECT NO.	FQ2210
DOCUMENT NO.	
PAGE NO.	

2210F001 199505191613RT

12.4 WD 1342 DD 119.8

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Tuesday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 06 day 06 month 1995 year

CONTRACTOR: SerroT

WEATHER: Sky: Partly Cloudy WIND: Light Temp. + 67°

0600 Arrive on site.
0645 SerroT Arrives on Site.
Note: Due To Subgrade Not Ready, SerroT
0700 unable To Do Liner.
Monitor D. Williams GeoSyntec Do
Sand Cone Test.
Package up Soils Testing Equipment To Be
Sent To Florida OFFice.
Note SerroT Leaves site Due To Subgrade Not
Ready To Deploy Liner.
1310 SerroT ARRives Back on Site. Temp + 84°
1330 SerroT Leaves Site. Subgrade STill Not Ready.
1335 Winds about 50 miles Hour
Rain Begins.
1400 Leave Site.

COPY TO: L.A.L.C. 122ND ST. & GeoSyntec PER: Harriet L. Lyon HRS: 8

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 7 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 71° CLEAR W LIGHT WINDS

0630 ON SITE; CONDITION: IN CELL VI FLOOR VERY WET DUE RAIN OVERNIGHT.

- SERROT CREW ON SITE, THEY TOUR SITE AN STATE UNABLE TO DEPLOY LINER. SERROT DEPART SITE AT 0710HRS.
- L.A.L.C. USING A D6H DOZER TO TRACK SURFACE OF CLAY LINER FOR DRYNG PURPOSES.
- DISCUSS WITH L. EMERSON & J. PRUSKO L.A.L.C. JOB PROGRESS IN CELL VI, CREW CONTINUE TO TRACK SURFACE AREA TO ALLOW MATERIAL TO DRY OUT.
- NINE ROLL OF GEO COMPOSITE ARRIVE ON SITE, SERROT NOT ON SITE TO UNLOAD MATERIAL, WILL RETURN ON 8th JUNE AROUND 9 AM TO BE UNLOADED.
- DISCUSS WITH SERROT OUTSTANDING QC. CERTIFICATION ON GEOSYNTHETICS MATERIAL, AND SUB-GRADE CERTIFICATION.

1500 DEPART SITE.

COPY TO: L. EMERSON PER: David Wilson HRS: 8.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Wednesday

PROJECT: LAND AND LAKES CO. - 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 07 day 06 month 1995 year

CONTRACTOR: SERCOT

WEATHER: Sky: WIND: Temp.:

Turn all Logs over To David Williams Geo Syntec Personel.

COPY TO: L.A.L.C 132ND ST + GeoSyntec PER: Harriet L. Lyon HRS: 0

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 8 day JUNE month 1995 year

CONTRACTOR: L.A.L.C.

WEATHER: OVERCAST W/ LIGHT MIST

0630 ON SITE,
- SITE CONDITIONS: CELL VI AREA (FLOOR) HAS STANDING WATER IN CELL SUMP, L.A.L.C PLAN TO PUMP WATER OUT OF CELL VI.
- SERROT NOT ON SITE AS OF 0800 HRS.

0930 - LIGHT MIST CONTINUES, TOUR SITE W/ LARRY EMERSON L.A.L.C. PROJECT ENG. DISCUSS JOB DELAYS DUE TO RAIN, EXPECTING RAIN THROUGH THIS WEEKEND. MR. EMERSON SUGEST DEMOBING SITE UNTIL MONDAY THE 12th OF JUNE, WEATHER PERMITING.
- DISCUSS WITH D. SCHAUER, WILL DEMOBE SITE TODAY

1230 DEPART SITE FOR AIRPORT. WILL TALK WITH L. EMERSON ON SUNDAY NIGHT TO DISCUSS JOB PROGRESS.
(DEMOB FROM SITE)

6 HRS ON SITE
3 HRS TLV.
9

COPY TO: L. EMERSON PER: Daniel Wilhelm HRS: 9

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT Thursday

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 08 day 06 month 1995 year

CONTRACTOR: Secrot

WEATHER:

0630 Demob Job # FQ2210 - Lansing, ILL.
1130 Arrive at Tomah. Wi. 5 Hours

0600 Leave Tomah, Wi.
1030 Arrive Park Falls, Wi. 4.5 Hours

COPY TO: L.A.L.C. 122ND ST. & GeoSyntec PER: Harriet L. Lyon HRS: 9.5

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 18 day JUNE month 1995 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 18 JUNE 95, FOR THE CONSTRUCTION OF CELL VI.

COMPACTED CLAY LINER

LAND AND LAKES CO. DRESSING UP FLOOR OF CELL VI, AND USING A SMOOTH DRUM ROLLER TO PREPARE CLAY SURFACE FOR DEPLOYMENT OF 60 MIL. LINER MATERIAL.

- RECEIVED RESULTS ON SHELBY TUBE SAMPLES #11, ON LIFT #4 AND SHELBY TUBE SAMPLE # 12, LIFT #6, RESULTS MEET THE SPECIFICATIONS OUTLINED IN THE CQA PLAN. IN ADDITION GEOSYNTEC OBTAINED THREE SOIL SAMPLES FROM MATERIAL TO BE USE AS LINER PROCTIVE COVER (L.P.C.), SAMPLE # PREFORMANCE LINER PROCTIVE COVER (P.L.P.C.) #1 -# 3. SAMPLE WERE COLLECTED FROM STOCKPILE, WEST OF CELL VI.

GEOSYNTHETICS LINER SYSTEM

SERROT'S CREW BEGIN TO DEPLOY THE 60 MIL. SMOOTH LINER ON THE FLOOR OF CELL VI, JUNE 12, 1995. SERROT DEPLOYED APPROXIMATE 97,124 SQ. FT. OF SMOOTH LINER, APPROXIMATE 98,000 SQ. FT. OF GEONET AND 7 oz. GEOTEXTILE ON FLOOR OF CELL VI. IN ADDITION SERROT DEPLOYED APPROXIMATE 8,400 SQ. FT. OF 10 oz. GEOTEXTILE IN THE BASE OF THE LEACHATE COLLECTION TRENCHES AS SHOWN IN THE PLANS. SERROT SEAMED APPROXIMATE 8051 LINER FT. OF SEAM.

- GEOSYNTEC MONITORED THE ABOVE ACTIVITIES SUCH AS, DEPLOYMENT, SEAMING AND NON DESTRUCTIVE TESTING OF PANELS AND SEAMS. OF THE 8051 LINER FT. OF SEAMING CONDUCTED BY SERROT'S CREW, GEOSYNTEC COLLECTED A TOTAL

COPY TO: LARRY EMERSON PER: David Willi

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 19 day 6 month 1995 year

OF 19 DESTRUCTIVE SAMPLES. ALL OF THE DESTRUCTIVE SAMPLES MEET THE REQUIRMENTS OF THE CQA PLAN, EXCEPT DESTRUCTIVE SAMPLE 10 FAILED. GEOSYNTEC COLLECTED TWO ADDITIONAL SAMPLE TO ISLOATE D.S. #10, WERE DS# 10 A AND 10 B. RECEIVED RESULTS ON DS #10 A AND DS#10 B WHICH ALSO FAILED. CONTINUE TO ISLOATE SAMPLE'S WITH DS# 10 A,1 AND DS#10 B,1. RECEIVED RESULTS FROM M.T.L. ON DS#10.A,1; DS #10 B,1; DS #18 AND DS #19 PASSED REQUIRED SPECIFICATIONS.

SERROT DEMOBED SITE ON FRIDAY, THE 15 OF JUNE 1995

COPY TO: LARRY EMERSON PER: David Wilson

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 12 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 77° CLEAR AND CALM

1330 · GEOSYNTEC ON SITE, BEGIN TO MONITOR DEPLOYMENT OF 60 MIL LINER SYSTEM ON BASE OF CELL VI. SERROT CREW OF 14 DEPLOYING, SEAMING AND CONDUCTING NON-DESTRUCTIVE TESTING OF SEAM.

· SEE PANEL PLACEMENT, SEAMING & NON DESTRUCTIVE LOGS

1545 · SERROT CREW EXTRUSION WELDING TIE IN SEAM/BUTT SEAM AT TOE OF EAST SLOPE, AND CONTINUE TO AIR TEST SEAM 1/2 – 11/12 COMPLETED AT 1700 HRS

· GEOSYNTEC MONITORING ABOVE CONSTRUCTION ACTIVITIES BY SERROT'S CREW, IN ADDITION MEASURING PANEL & SEAMS

1730 · SERROT STOP WORK & DEPART SITE

GEOSYNTEC WALKING PANEL MARKING REPAIRS TO 60 MIL LINER SYSTEM AND MEASURING LOCATIONS OF REPAIRS.

1830 GEOSYNTEC DEPART SITE.

REMOB. TO SITE

TODAYS ACTIVITIES: DEPART FOR LAND AND LAKES CO. CELL VI 1000 HRS

ARRIVE AT SITE 1330 HRS

1830 HRS.

TLV = 3.5 HRS

FQ2210 5.0 HRS

8.5

COPY TO: LARRY EMERSON PER: Dan Quillen HRS: 8.5

 FILE NO. 1-04-DFR

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 13 day JUNE month 1995 year

CONTRACTOR: GUNDLE

WEATHER: 75° CLEAR, WITH LIGHT WINDS

0700 ON SITE, SERROT CREW ON SITE. TECHNICIAN RUNNING (AM) TRIAL SEAM TEST; 2 FUSION & 1 EXTRUSION SAMPLE PASSED.
· GEOSYNTEC MONITORING DEPLOYMENT AND SEAMING OPERATIONS CONDUCTED BY SERROT'S CREW.

0750 SERROT CREW BEGIN DEPLOYING PANEL #13 – #16, CREW PREFABING PANEL AND AS SOON AS THE SOUTH EAST EDGE OF CELL VI ~~IS OKAY~~ AND ANCHOR TRENCH, PANEL #13 – #16 WILL BE PLACED INTO SUMP AREA. SEE CQA LOGS.

1100 GEOSYNTEC CONTINUE TO MONITOR PANEL PLACEMENT & SEAMING OF 60 MIL SMOOTH GEOMEMBRANE LINER
· SERROT PREFABING PANEL #19 – #21 AND COMPLETING NON-DESTRUCTIVE TESTING (AIR PRESURE) OF FUSION WELDED SEAM.

1305 · NINE ROLL OF GEOCOMPOSITE ARRIVE ON SITE, GEOSYNTEC INVENTORY MATERIAL. REQUESTED Q.C. CERTIFICATIONS ON ALL GEOSYNTHETICE MATERIAL ON SITE, NOTE: RECEIVED CERTIFICATION ON GEONET ONLY, SEE INVENTORY LOGS.
· SERROT DEPLOYING GEOCOMPOSITE ON EAST SLOPE AND USING THE WRAPS TO FASTEN THE GEONET.

1602 LAND AND LAKES COMPLETED ROLLING SUB GRADE IN SOUTH EAST CORNER OF CELL FLOOR. SERROT PLACING PANEL #16 – #20 (PREFABED) IN SOUTH EAST CORNER, SUMP AREA.
GEOSYNTEC WALKING CELL FLOOR WITH L. EMERSON (LAND AND LAKES) DISCUSSING FIELD CONDITIONS AND JOB PROGRESS.

1645 · SERROT CREW DEPLOYING GEONET AND GEOTEXTILE (DRAINAGE LAYER) ON BASE OF CELL VI, ALONG SOUTH ANCHOR TRENCH. SERROT USING SHOVELS TO PLACE CLAY MATERIAL & BACKFILLING ANCHOR TRENCH AFTER PLACING DRAINAGE LAYER INTO TRENCH.

1900 SERROT OFF SITE

COPY TO: PER: David Willis HRS:

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 14 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 75° CLEAR

0630 ON SITE; LAND AND LAKES CREW DRESSING UP WEST END OF CELL VI, FOR THE DEPLOYMENT OF 60 MIL LINER (SMOOTH).

- SERROT ON SITE AT 0700 HRS. TECHNICIANS RUNNING (AM) TRIAL SEAM TEST ON FUSION & EXTRUSION WELDING EQUIPMENT.

NOTE: DEPLOYED PANEL # S-1 – S-22; APPROX. 66,800 S.F. OF SMOOTH 60 MIL. LINER TO DATE.

- SERROT'S CREW BEGIN DEPLOYING PANEL # S-23 – S-27. GEOSYNTEC MONITORING DEPLOYMENT AND THE SURFACE OF THE COMPACTED CLAY LINER BEFORE PLACEMENT BEGAN.
- SEE: PANEL PLACEMENT & SEAMING LOG
- TECHNICIANS REMOVING DS # 7, 8, 10 AND # 11, MONITORING FIELD TESTING BY SERROT OF DESTRUCTIVE SAMPLES. GEOSYNTEC SHIPPING DS # 7, 8, 10 & # 11 TO M.T.L. FOR DESTRUCTIVE TESTING.
- SERROT CONTINUE TO DEPLOY 60 MIL. SMOOTH LINER AND SEAMING PANELS; PANEL # S-28 – S-33.

GEOSYNTEC RECEIVED RESULTS ON SOIL SAMPLES # S.T. 8, 9, 10, 11 & # 12; PCL # 4, # 5 # 6 & # 7; ALSO CONFORMANCE SAMPLE # LPC # 1

NOTE ALL TEST RESULTS INDICATE PASSING RESULTS, AS OUTLINED IN THE C.Q.A PLAN; EXCEPT CONFORMANCE SAMPLE LPC # 1 FAILED CARBONATE CONTENT. LPC # 1 CARBONATE CONTENT IS 20.8%, THE SPECIFICATION ARE 15% MIN.

1230 - SERROT COMPLETING AIR TESTING OF SEAM, REPAIRS TO 60 MIL. SMOOTH LINER, PANEL # 23 – 33

- GEOSYNTEC MARKING DS # 14 – 17, TO BE REMOVED BY SERROT'S CREW.

1245 HARRY TOMLINSON ON SITE, DISCUSS JOB PROGRESS.

1430 SERROT CREW STAGING ROLL OF GEONET FOR DEPLOYMENT OVER PANEL # S-1 – S-22; SERROT PLAN TO DEPLOY THE GEOTEXTILE OVER THE NET

COPY TO: LARRY EMERSON PER: Daniel Willes HRS: –

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 14 day JUNE month 1995 year

CONTRACTOR: LAND & LAKES Co.

WEATHER: 88° CLEAR, LIGHT WINDS

1510 HARRY TOMLINSON (GEOSYNTEC) INFORMS ME THAT AFTER REVIEWING THE SPECIFICATION ON LINER PROCTIVE COVER, GEOSYNTEC WILL ACCEPT SOIL SAMPLE LPC #1; WITH 20.8% CARBONATE CONTENT. SERROT CREW CONTINUE TO REMOVE DS #12 - #17, COMPLETING REPAIRS AND NON-DESTRUCTIVE TESTING.

GEOSYNTEC MONITORING ABOVE ACTIVITIES BY SERROT, MEASURING PANEL & SEAM #12 - #33, AND COMPLETING FIELD SKETCHES.

1800 SERROT STOP WORK & DEPART SITE.

1830 GEOSYNTEC DEPART SITE.

COPY TO: LARRY EMERSON PER: David Willem HRS: 12

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 15 day 6 month 1995 year

CONTRACTOR: LAND & LAKES Co

WEATHER: 75° CLEAR

0630 ON SITE. W/HARRY TOMLINSON (GEOSYNTEC)
- SERROT MAKING REPAIRS IN SUMP AREA, REMOVING STANDING WATER UNDER 60MIL LINER SYSTEM; DEPLOYING THE GEONET AND GEOTEXTILE OVER THE 60MIL. LINER AS A DRAINAGE LAYER. SERROT'S CREW USING TIE WRAPS TO FASTEN THE GEONET, AND SEWING THE GEOTEXTILE AS OUTLINED IN THE CQA PLAN.
- GEOSYNTEC MONITOR AS CREW COMPLETING REPAIR IN SUMPS AREA, DEPLOYING GEONET & GEOTEXTILE MATERIALS. GEOSYNTEC COMPLETED WALK THROUGH WITH SERROT'S FORMAN ALL REPAIRS COMPLETED, EXCEPT REPAIR IN SUMP AREA.

1100 SERROT CONTINUE TO WORK ON REPAIRS IN SUMP, REMOVING STANDING WATER; DEPLOYING GEONET & GEOTEXTILE ON FLOOR AREA OF CELL VI, DRAINAGE LAYER.
- GEOSYNTEC DISCUSS WITH SERROT'S CREW PLAN TO ADDRESS RAIN FLAP ALONG THE NORTH EDGE OF CELL VI, SERROT WILL

1300 DISCUSS WITH LAND AND LAKES, LARRY EMERSON. AFTER DISCUSSIONS WITH H. TOMLINSON (GEOSYNTEC) STATES THAT HE WILL DELETE RAIN FLAP FROM NORTH EDGE OF CELL VI.

1510 - RECEIVED RESULTS ON DS#7, #8, #10 AND #11 FROM M.T.L. IN BOCA RATON, FL. ALL SAMPLES PASSED, EXCEPT DS#10. INFORMED SERROT'S CREW OF RESULTS.

~~1510~~ GEOSYNTEC MARKING DS#10-A (AFTER) AND DS#10-B (BEFORE) TO ISLATE FAILING SAMPLE #10. SERROT REMOVED DS#10 A+B THEN BEGIN TO EXTRUSION WELD CAP FROM DS10 A TO DS10-B.

NOTE: SERROT PLACING 10 OZ GEOTEXTILE 1135 IN LEACHATE COLLECTION TRENCHES AS A CUSHING, THEN OVER LAYING GEONET & GEOTEXTILE

1438 - SERROT VACUUM BOX TESTING CAP FROM DS#10 A TO DS 10 B. IN ADDITION SERROT'S CREW CUTTING SLITS IN THE GEONET (COMPOSITE) AT TOE OF EAST SLOPE.

COPY TO: LARRY EMERSON PER: David Williams HRS: –

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 15 day 6 month 1995 year

CONTRACTOR: LAND & LAKES Co.

WEATHER: 89° CLEAR, W/ LIGHT WINDS.

1715 SERROT COMPLETED VACUUM BOX TESTING REPAIR + SEWING 702 GEOTEXTILE OVER REPAIRED AREA, AS OUTLINED IN THE PLANS & SPECIFICATIONS.

1747 SERROT STOP WORK, STORING EQUIPMENT.

1800 SERROT & GEOSYNTEC DEPART SITE.

NOTE: SHIPPED DS#10 A & B TO M.T.L. FOR DESTRUCTIVE TESTING. ALONG WITH DS#9, DS#12 – #17.

COPY TO: LARRY EMERSON PER: David Williams HRS: 11.5

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 16 day 6 month 1995 year

CONTRACTOR: LAND + LAKES

WEATHER: 77° CLEAR & CLAM

0630 ON SITE W/ SERROT'S CREW.

- LAND AND LAKES CREW CONTINUE TO BACKFILL AND COMPACT CLAY MATERIAL IN ANCHOR TRENCH, COMPACTING W/ A JUMPING JACK COMPACTOR.
- SERROT REMOVING SCRAPS FROM CELL VI FLOOR & SAND BAGS FROM ANCHOR TRENCH AS LABORS BACKFILL TRENCHES.
- GEO SYNTEC RECEIVED RESULTS ON DESTRUCTIVE SAMPLES (D.S.) #9, #12, #13, #14, #15, #16, #17, 10A AND 10B. NOTE DS#10A AND DS#10B FAILED, DS#9, 12-#17 PASSED DESTRUCTIVE TESTING. INFORMED SERROT FORMAN OF TEST RESULTS, SERROT WILL ISOLATE DESTRUCTIVE SAMPLES. IN ADDITION GEO SYNTEC WILL TAKE DESTRUCTIVE SAMPLES FROM CAP OF FAILED SEAM, DS#18 AND DS#19; SEE DESTRUCTIVE TEST LOG.

1230 SERROT RUNNING (PM) TRIAL SEAM TEST, RESULTS PASSED, EXTRUSION WELD EQUIPMENT #22 & #47.

- LAND AND LAKE CO. BEGIN STOCKPILING LINER PROCTIVE COVER, SAND JUST WEST OF CELL VI, PLAN TO BEGIN PLACEMENT ON MONDAY. GEO SYNTEC OBTAINED PREFORMANCE SAMPLES L.P.C. #2-#4 FROM STOCKPILE OF LINER PROCTIVE COVER MATERIAL.
- GEO SYNTEC REVIEWING MATERIAL DEPLOYED IN CELL VI WITH SERROT CREW AND LARRY EMERSON LAND AND LAKES.
- SHIPPING DS#10-A1, 10A-1, 18 AND DS#19 TO MTL. FOR DESTRUCTIVE TESTING.
- WALK CELL VI AREA ALL REPAIRS TO GEOTEXTILES AN GEONET ARE COMPLETE AS OUTLINED IN THE CQA PLAN.

1700 SERROT CREW DEPART SITE; GEO SYNTEC REVIEWING CQA LOGS.

1800 DEPART SITE

COPY TO: LARRY EMERSON PER: Daig Willem HRS: 11.5

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 17 day 6 month 1995 year

CONTRACTOR: LAND AND LAKES

WEATHER: 75° CLEAR

0700 ON SITE, GEOSYNTEC REVIEWING PANEL PLACEMENT & SEAMING LOGS, AND NON DESTRUCTIVE TESTING.

0930 TOUR SITE WITH LARRY EMERSON, NEED TO COMPLETE BACK-FILLING ANCHOR TRENCH AROUND CELL VI AREA. ALSO, NOTE: STANDING WATER UNDER 60MIL. LINER IN SUMP AREA, FROM ANCHOR TRENCH IN THE SOUTH WEST CORNER OF CELL VI. SERROT'S CREW WILL HAVE TO CUT LINER TO REMOVE WATER THEN MAKE REPAIRS AS OUTLINED IN THE CQA PLAN.

- RETURN TO FIELD OFFICE, CONTINUE TO CROSS REF. LOGS.

1300 DEPART SITE NO CONSTRUCTION ACTIVITIES.

COPY TO: LARRY EMERSON PER: David Wilson HRS: 6

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 18 day 6 month 1995 year

CONTRACTOR: LAND + LAKES Co

WEATHER: —

- GeoSyntec reviewing daily reports for weekly report
  reviewing soil + geosynthetics logs.

COPY TO: Larry Emerson PER: David Williams HRS: 3

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 25 day JUNE month 1995 year

THIS REPORT SUMMARIZES WORK WHICH WAS PERFORMED DURING THE WEEK ENDING 25 JUNE 95 FOR THE CONSTRUCTION OF CELL VI.

COMPACTED CLAY LINER

- COMPACTED CLAY LINER COMPLETED; LAND AND LAKES CREW PLACED CLAY MATERIAL IN ANCHOR TRENCHES AND COMPACTED MATERIAL IN 9" LIFTS.

GEOSYNTHETICS LINER SYSTEM

- SERROT TECHNICIANS (TWO) RETURN TO SITE TO REMOVE WATER FROM UNDER LINER, IN THE SUMP AREA. TECHNICIANS REMOVE WATER, PATCH LINER AND VACUUM BOX TEST REPAIR. IN ADDITION SERROT PATCHED GEONET AND GEOTEXTILE AT REPAIR LOCATION. SERROT DEPART SITE AT 1400 HRS., THE 22ND OF JUNE.

LINER PROCTIVE COVER

- LAND AND LAKES CO. BEGIN PLACING PROCTOVE COVER MATERIAL ON MONDAY MORNING IN APPROXIMATE 3' LIFT, TO ALLOW DUMP TRUCKS TO HAUL TO EDGE OF SAND PLACEMENT AREA. PROCTIVE COVER MATERIAL WAS PLACED FROM THE NORTH WEST CORNER OF CELL VI TO THE SOUTH EAST EDGES OF LEACHATE COLLECTION TRENCHES. CREW WILL COMPLETE PLACING SAND COVER (PROCTIVE) AS SOON AS THE GEOTEXTILE IS SEWN OVER THE GRAVEL LEACHATE COLLECTION TRENCHES AND SUMP AREA. CREW HAS PLACED APPROXIMATE 4300 yd^3 OF MATERIAL

COPY TO: L. EMERSON PER: Daniel Williams

GeoSyntec Consultants

Land and Lakes Co.

WEEKLY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 25 day JUNE month 1995 year

PIPE BEDDING GRAVEL

· LAND AND LAKES CREW BEGIN TO HAUL PIPE BEDDING MATERIAL TO SITE, STOCKPILING MATERIAL JUST NORTH OF HAUL RD. CREW USED A FRONT END LOADER TO UNLOAD DUMPS TRUCKS THE PLACE GRAVEL OVER THE 6" HDPE PIPE IN THE LEACHATE COLLECTION TRENCHES AND SUMP AREA. CREW PLACED APPROXIMATE 90 yd^3 OF MATERIAL.

NOTE GEOSYNTEC DEMOB SITE ON JUNE 24th

COPY TO: L. EMERSON PER: David Williams

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 19 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES CO.

WEATHER: 80° CLEAR, MODERATE WINDS.

0630 ON SITE, LAND AND LAKES CREW WILL CONTINUE TO BACKFILL THE ANCHOR TRENCHES. AND PLAN TO PLACE LINER PROCTIVE COVER MATERIAL (SAND) OVER THE GEOSYNTHETICS LINER SYSTEM.

- HDPE PIPE FUSION EQUIPMENT ARRIVES ON SITE, FROM FORRER SUPPLY; A. McELROY 2"-8" AND A 8"-18" BUTT FUSION WELDERS.

1130 - DISCUSS WITH L. EMERSON BACKFILLING OF ANCHOR TRENCHES AND PLACEMENT OF LINER PROCTIVE COVER MATERIAL. GEOSYNTEC COLLECTED TWO ADDITIONAL SAMPLES OF PROCTIVE COVER MATERIAL BEING STOCKPILED ON SITE.

1330 - LAND AND LAKES CO's CREW (3 LABORS) CONTINUE TO BACKFILL ANCHOR TRENCHES AROUND CELL VI

- GEOSYNTEC MONITORING LABORS BACKFILLING ANCHOR TRENCHS AND PACKING SOIL SAMPLE LINER PROCTIVE COVER #2-#6 TO SOIL LAB. IN ATLANTA, GA. FOR PERFORMANCE SAMPLING.
- TALK WITH DAN SCHAVER, REVIEWING JOB PROGRESS AND WORK SCHEDULE.

1630 DEPART SITE

COPY TO: LARRY EMERSON PER: David Williams HRS: 10

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 20 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: 83° CLEAR, LIGHT WINDS.

0630 ON SITE, LAND AND LAKES CREW WILL CONTINUE TO USE LABORS TO BACKFILL ANCHOR TRENCHES AROUND CELL VI. AN ALSO CONTINUE TO BUTT FUSION WELD 18" AND 6" HDPE PIPE USING A McELROY PIPE WELDING EQUIPMENT.

1000 GEOSYNTEC MONITORING LABORS (3) BACKFILLING ANCHOR TRENCH

1050 (A.T.) IN THE SOUTH WEST CORNER OF CELL VI, AND BEGIN BACKFILLING ANCHOR TRENCH ALONG THE NORTH EDGE OF CELL VI USING A FRONT END LOADER AND A D4 L.G.P. DOZER.

1205 BEGIN PLACING LINER PROCTIVE COVER (L.P.C.) IN THE NORTHWEST CORNER OF CELL VI, MATERIAL BEING PLACED IN 3' LIFTS IN AREA'S WHERE VOLVO A35 DUMPS TRUCKS ARE RUNNING.

NOTE: L.A.L.C. USING (3) VOLVO A35 DUMPS TRUCKS.

1410 GEOSYNTEC CONTINUE TO MONITOR L.P.C. PLACEMENT OVER GEOSYNTHETICS LINER SYSTEM ON FLOOR OF CELL VI.

1600 LAND AND LAKES Co. (L.A.L.C.) STOP WORK. GEOSYNTEC DISCUSS WITH L. EMERSON (SITE ENG.) PLAN'S FOR GRAVEL PLACEMENT & LEACHATE COLLECTION PIPE IN CELL VI. ALSO HAVING SERVOT RETURN TO SITE TO REMOVE STANDING WATER FROM CELL VI SUMP AREA AND MAKE PROPER REPAIR BEFORE LOADING THE SUMP WITH GRAVEL & COLLECTION PIPE.

1630 GEOSYNTEC OFF SITE

COPY TO: LARRY EMERSON PER: David Williams HRS: 10

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 21 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES Co (L.A.L.C.)

WEATHER: 80° CLEAR LIGHT WINDS.

0615 ON SITE. DISCUSS TODAY WORK SCHEDULE WITH L. EMERSON (L.A.L.C.). THEY PLAN TO CONTINUE PLACING LINER PROCTIVE COVER (LPC) ON BASE OF CELL VI. GRAVEL SHOULD ARRIVE ON SITE TODAY FOR PIPE BEDDING GRAVEL IN THE LEACHATE COLLECTION TRENCHES & SUMP AREA.

- LAND AND LAKES CREW CONTINUE TO BUTT FUSION WELD THE 2", 6" AND 18" HDPE PIPE FOR THE COLLECTION OF LEACHATE FROM CELL VI AREA.
- DISCUSS WITH L. EMERSON OUTSTANDING SUBMITTAL ON THE HDPE PIPE, PIPE BEDDING GRAVEL AND THE LINER PROCTIVE LAYER (SAND).
- LAND AND LAKES Co. CONTINUE TO PLACE L.P.C. (SAND) FROM BUSSE IN APPROXIMATE 3' LIFT, WORK EASTWARD TOWARD THE SUMP AREA. IN ADDITION LABORS CUTTING LINER IN SUMP OF CELL VI, SO THAT CREW CAN REMOVE WATER FROM UNDER 60MIL. LINER SYSTEM. SERVOT TECHNICIANS WILL ARRIVE ON THE 22 JUNE TO MAKE REPAIR.
- GEOSYNTEC MONITORING ABOVE ACTIVITIES CONDUCTED BY LAND AND LAKES Co's CREW.

1230 L.A.L.C. CREW CONTINUE TO PLACE LINER PROCTIVE COVER ON BASE OF CELL VI USING A D6 H LGP DOZER, LIFT THICKNESS IS 3'.

1600 CREW STOP PLACING LINER PROCTIVE COVER MATERIAL, BUT CONTINUE TO REMOVE STANDING WATER FROM SUMP OF CELL VI.

1620 LAND & LAKES CREW PUMPING WATER STOP WORK & DEPARTING SITE.

1700 GEOSYNTEC OFF SITE

COPY TO: LARRY EMERSON PER: David Willer HRS: 10.75

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 22 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: 75° CLEAR, LIGHT WINDS

0630 ON SITE, LAND AND LAKES CREW WILL CONTINUE TO PLACE (SAND) LINER PROTECTIVE COVER IN BASE OF CELL VI. LABORERS CONTINUE TO REMOVE STANDING WATER FROM BASE OF CELL VI, SUMP.

- GEOSYNTEC MONITORING SAND PLACEMENT OVER LINER SYSTEM, L.A.L.C. USING 2 LABORS TO RAKE IN FRONT AS MATERIAL IS BEING SPREAD TO CUT OFF ANY WRINKLES THAT MAY BEGIN.

0900 SERROT CREW OF TWO TECHNICIANS RETURN TO SITE, TO MAKE REPAIR IN THE SUMP AREA OF CELL VI. TECHNICIANS WILL COMPLETE THE REPAIR (A PATCH) AS SOON AS ALL WATER IS REMOVED FROM SUMP AREA.

- DISCUSS WITH LARRY EMERSON METHODS OF PLACING THE 18" RISER PIPE DOWN THE SLOPE OF CELL VI AND INTO THE SUMP.
- SERROT BEGIN RUNNING TRIAL SEAM TEST ON EQUIPMENT EXTRUSION WELD #22. PEEL TEST RESULTS 97 AND 105 SHEAR 152 AND 167

1215 - TECHNICIAN MAKING REPAIR IN SIDE SLOPES OF THE SUMP FOR CELL VI. NOTE: EQUIPMENT PROBLEM WITH EXTRUSION WELD #22 FROM 11:00 AM – 12 NOON.

- LAND AND LAKES Co. CREW PLACING 6" HDPE PIPE IN LEACHATE COLLECTION TRENCHES IN BASE OF CELL, APPROXIMATE 525' OF 6" PERFORATED HDPE PIPE DEPLOYED IN CELL VI, BASE.

1400 SERROT CREW COMPLETED REPAIR IN SUMP OF CELL VI, GEOSYNTEC MONITORED SEAMING AND NON-DESTRUCTIVE TESTING OF THIS REPAIR. LAND & LAKES CREW LOADING SUMP WITH SAND BAGS UNTILL PLACING HDPE PIPE IN, PLACED WITH BEDDING STONE.

COPY TO: LARRY EMERSON PER: David Williams HRS: —

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 22 day June month 1995 year

CONTRACTOR: LAND & LAKES

WEATHER: 90° CLEAR & CALM

1600 LAND AND LAKES CREW BAG DOWN SUMP AREA IN CELL VI FLOOR & PREPARE FOR PLACING 18" HDPE PIPE IN THE CAP.

1630 CREW DEPART

COPY TO: L. Emerson PER: David Wilkins HRS: 10.

GeoSyntec Consultants

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 23 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES Co.

WEATHER: 73° CLEAR, LIGHT WIND.

0630 ON SITE, TODAY ACTIVITIES WILL BE PLACING LEACHATE COLLECTION PIPE IN CELL VI, 18" HDPE & 6" HDPE.
GEOSYNTEC MONITORING LAND AND LAKES CREW USING TRACKHOE TO PLACE 18" HDPE PIPE (UP RISER) DOWN THE EAST SLOPE AND INTO THE SUMP.

0950 18" HDPE PIPE IN - PLACE DOWN EAST SLOPE, CREW PLACING AND BUTT FUSION WELDING 6" HDPE AT TOE OF SLOPE.
- THREE LOADS OF PIPE BEDDING GRAVEL ARRIVE ON SITE FROM GILLEN QUARRY, WATERLOO, WI. GEOSYNTEC WAITING FOR SUBMITTAL FROM LAND AND LAKES ON THE PIPE BEDDING GRAVEL.
- DISCUSS WITH L. EMERSON ON METHODS OF PLACING THE PIPE BEDDING STONE IN THE LEACHATE COLLECTION TRENCHES.

1200 SIX (6) INCH HDPE PIPE IN PLACE FOR BOTH CLEAN OUT RISES AND IN THE COLLECTION TRENCHES.
- LAND AND LAKES Co. BEGIN TO PLACE PIPE BEDDING GRAVEL IN LEACHATE TRENCH OVER THE SIX INCH PREFORATED PIPE.

OUT STANDING ISSUE: - PLACING PIPE BEDDING GRAVEL, - DEPLOYING GEOTEXTILE 7oz OVER THE PIPE BEDDING GRAVEL, COMPLETE PLACING LINER PROTECTIVE COVER MATERIAL OVER ENTIRE CELL FLOOR & UP SLOPE.

1500 CONTINUE TO MONITOR PLACEMENT OF PIPE BEDDING GRAVEL USNG A TRACKHOE TO PLACE GRAVEL OVER 6" HDPE PIPE.
- DISCUSS SEWING OF GEOTEXTILE TO COVER GRAVEL IN LEACHATE COLLECTION TRENCH.

1630 STOP WORK & DEPART SITE.

COPY TO: LARRY EMERSON PER: David Williamson HRS: 10

GEOSYNTEC CONSULTANTS

Land and Lakes Co.

DAILY FIELD REPORT

PROJECT: LAND AND LAKES CO. – 122nd STREET LANDFILL

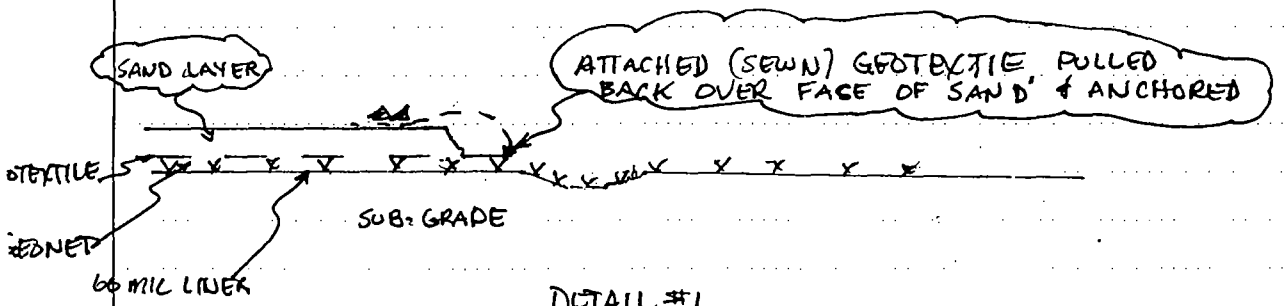
LOCATION: CHICAGO, ILLINOIS PROJECT NO: FQ2210 TASK NO.: 06

DESCRIPTION: CELL VI DATE: 24 day JUNE month 1995 year

CONTRACTOR: LAND AND LAKES Co

WEATHER: 78° CLEAR, LIGHT WINDS

0630 · ON SITE, LOADS (3) OF PIPE BEDDING GRAVEL BEING UNLOADED IN STOCKPILE AREA. LAND AND LAKES CREW LOADING VOLVO A 35 DUMP TRUCKS WITH GRAVEL THEN USING A TRACKHOE TO UNLOAD AND PLACE MATERIAL INTO COLLECTION TRENCHES. IN ADDITION LAND & LAKES CREW PREPARING TO SEW GEOTEXTILE AT EDGE ON SAND (SEE ~~ATT.~~ DETAIL #1) TO PREVENT ANY SAND WASHING INTO THE GEONET/TRENCH AREA.



DETAIL #1

· GEOSYNTEC MONITORING AS CREW SEW'S THE GEOTEXTILE AND PLAN'S TO OVER LAP OVER THE FACE OF THE SAND LAYER

1200 · LAND AND LAKES CREW COMPLETED PLACEMENT OF PIPE BEDDING GRAVEL IN SUMP AND LEACHATE COLLECTION TRENCHES. LABORERS SEWING GEOTEXTILE OVER LAP OVER THE GRAVEL IN THE TRENCHES.

1305 SEWING MACHING BRAKE DOWN, LAND & LAKES CO: WILL ORDER OR HAVE NEW MACHING, MONDAY.

1430 DEPART SITE; DEMOBING SITE..

COPY TO: L. EMERSON PER: David Williams HRS: 8